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Tritt et al.

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(45) **Date of Patent:** **Sep. 25, 2007**

(54) **SIMULTANEOUS REAL-TIME ACCESS TO FINANCIAL INFORMATION**

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Primary Examiner—Andrew Joseph Rudy
(74) *Attorney, Agent, or Firm*—Brinks Hofer Gilson & Lione

(73) Assignee: **DST Systems Inc.**, Kansas City, MO (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/475,637**

(22) Filed: **Dec. 30, 1999**

(51) **Int. Cl.**
G06Q 40/00 (2006.01)

(52) **U.S. Cl.** **705/36 R**

(58) **Field of Classification Search** 705/35, 705/37, 38, 39, 42, 44, 45, 36 T
See application file for complete search history.

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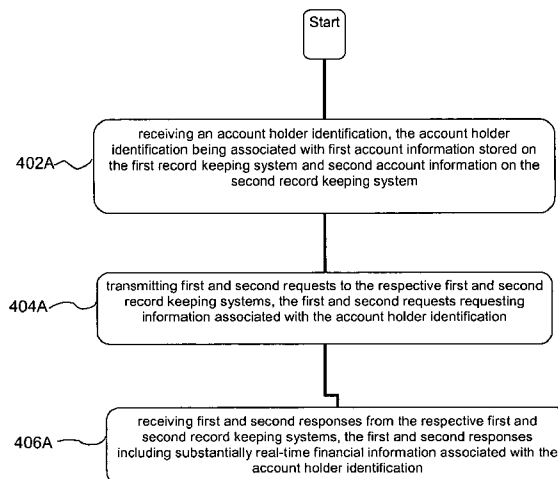
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(57) **ABSTRACT**

The present invention is defined by the following claims, and nothing in this section should be taken as a limitation on those claims. By way of introduction, the preferred embodiments describe below include a method of simultaneously presenting user specific real-time financial information includes authenticating a user, for example by using a user-id and password. Then receiving an input from the user indicating the shareholder of interest. The user is then presented with a list of the shareholder's account information. The shareholder account information can be retrieved from several different record keeping systems. The record keeping systems can be maintained by different entities and can store the respective account information in different formats. The shareholder account information can be retrieved by broadcasting an account inquiry to the record keeping systems or by using a cross-reference table that indicates which record keeping systems the shareholder has accounts with. A combination of the broadcast and cross-reference table can be used. Once the shareholder account information is presented, the user can select an account, for example by a hyperlink tag, and receive detailed information about that account.

12 Claims, 46 Drawing Sheets



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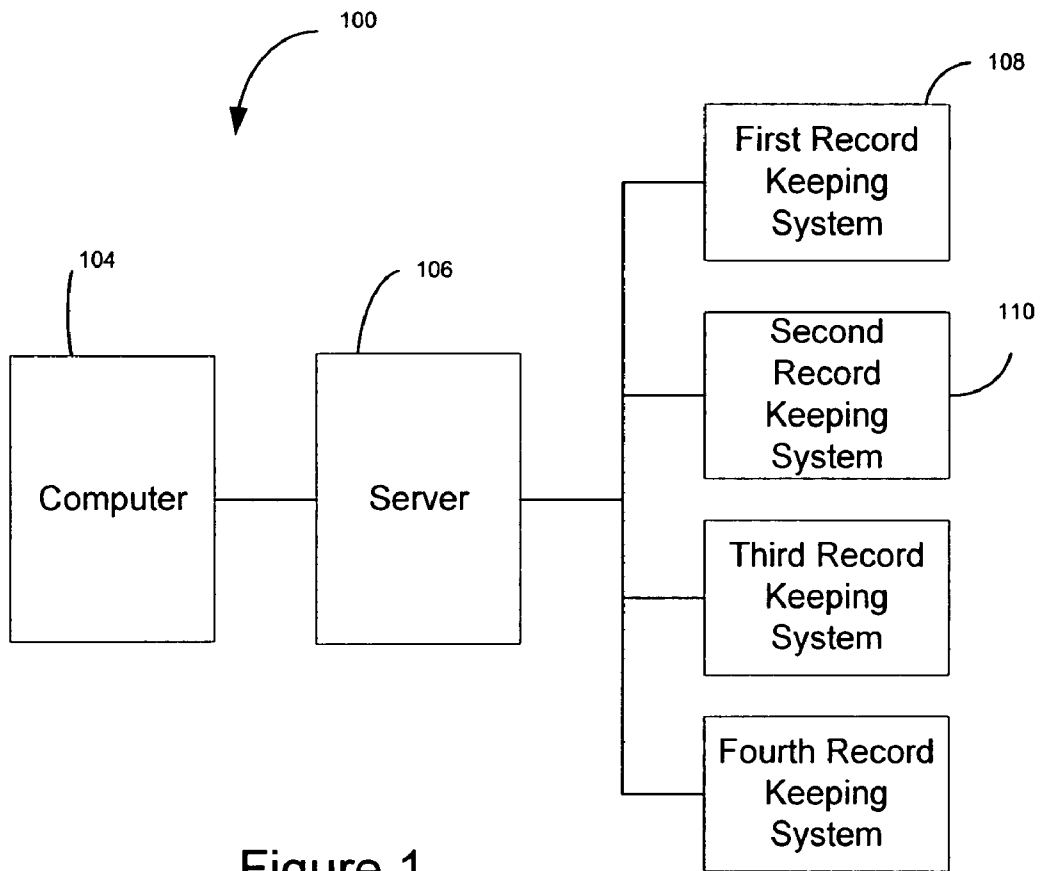


Figure 1

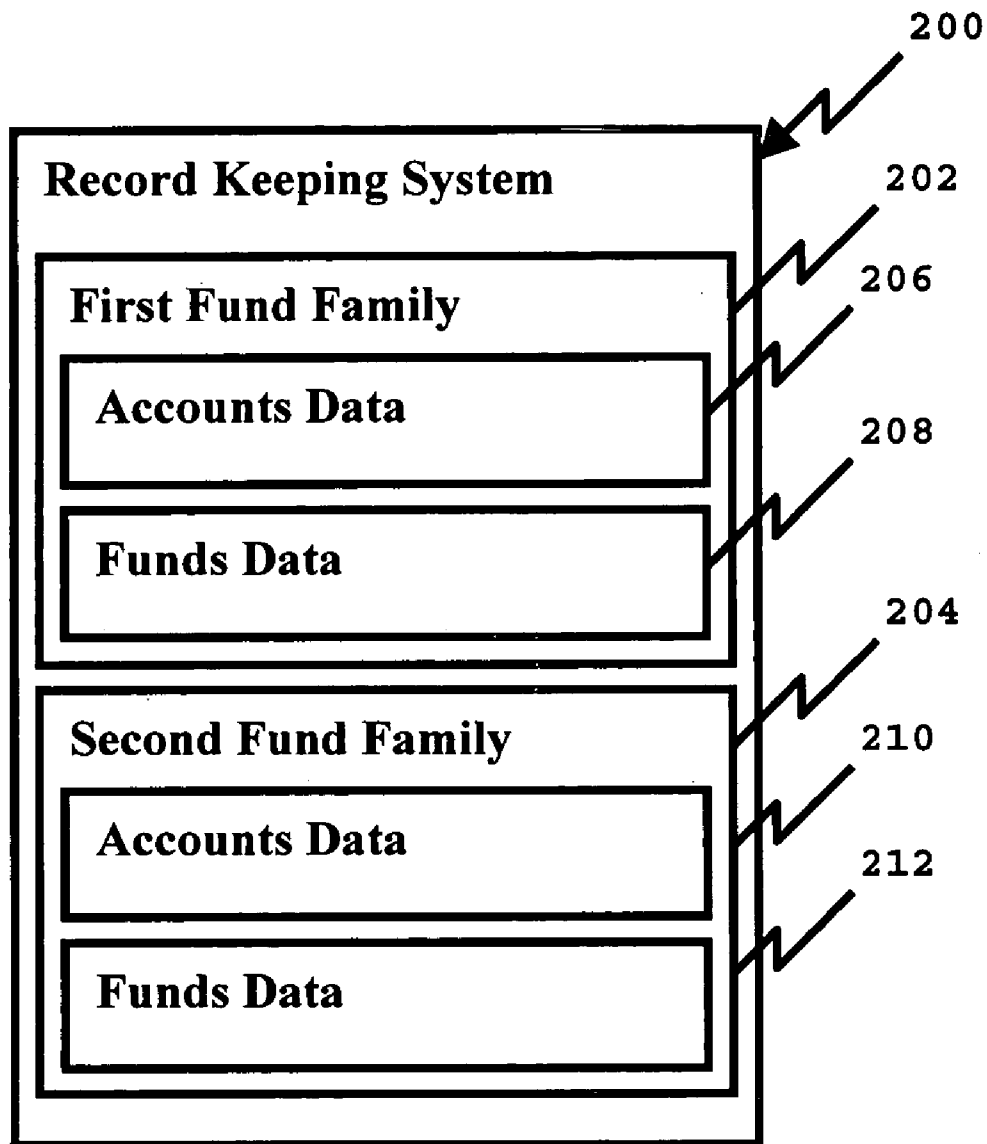


Figure 2

302

304

306

300

Total Balance: \$405,210.00						
First Fund Company						
Account	Tax ID	Fund name	SH reg.	Shares	Balance	
000111	123-45-6789	Growth	John Smith	400	\$150,111.00	
000111	123-45-6789	Tech Fund	John Smith	100	\$ 50,111.00	
				Total:	\$200,222.00	
Second Fund Company						
Account	Tax ID	Fund name	SH reg.	Shares	Balance	
999888	123-45-6789	Income Fund	Trust for John Smith	200	\$198,989.00	
999888	123-45-6789	IRA Fund	John & Mary Smith	123	\$ 5,999.00	
				Total:	\$204,988.00	

Figure 3

Fig. 4

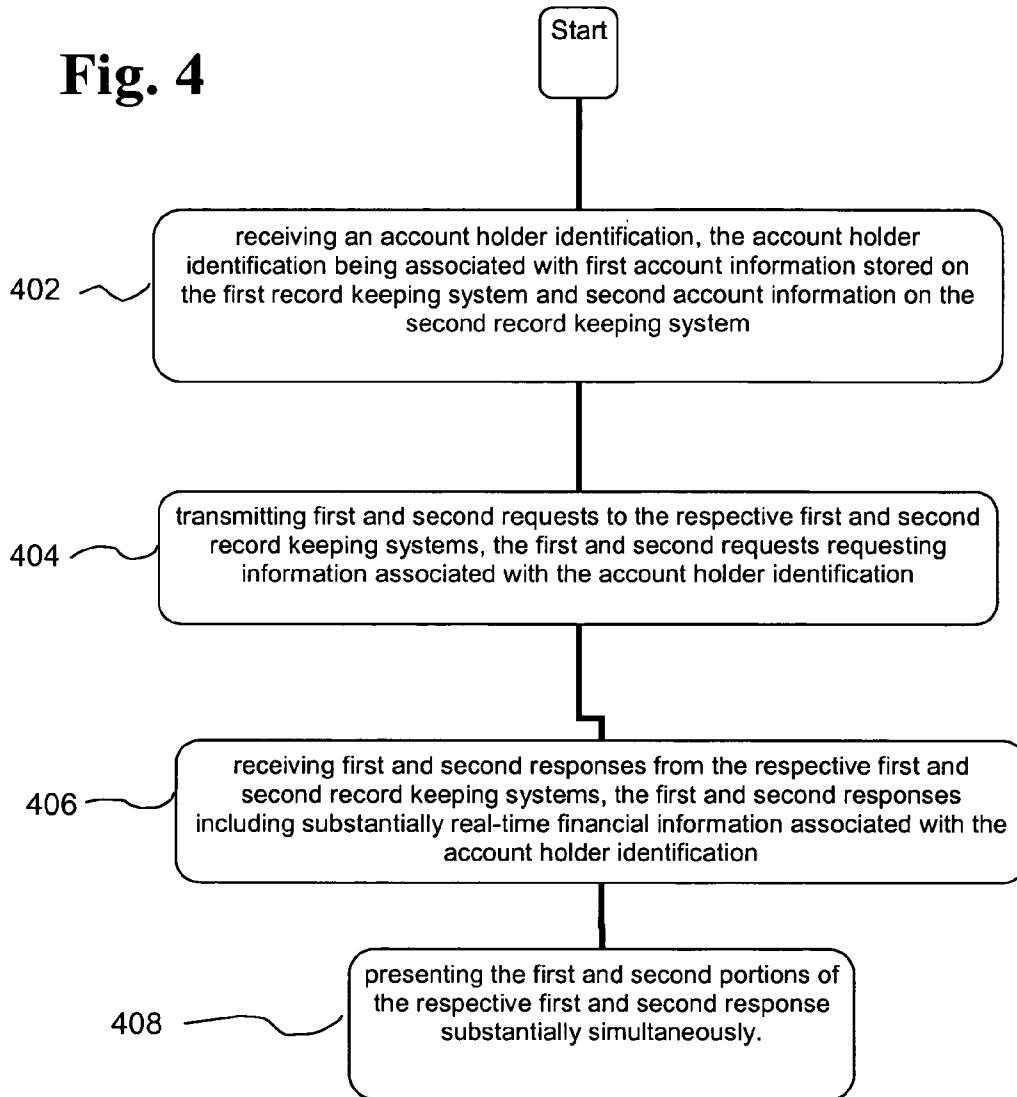


Fig. 4A

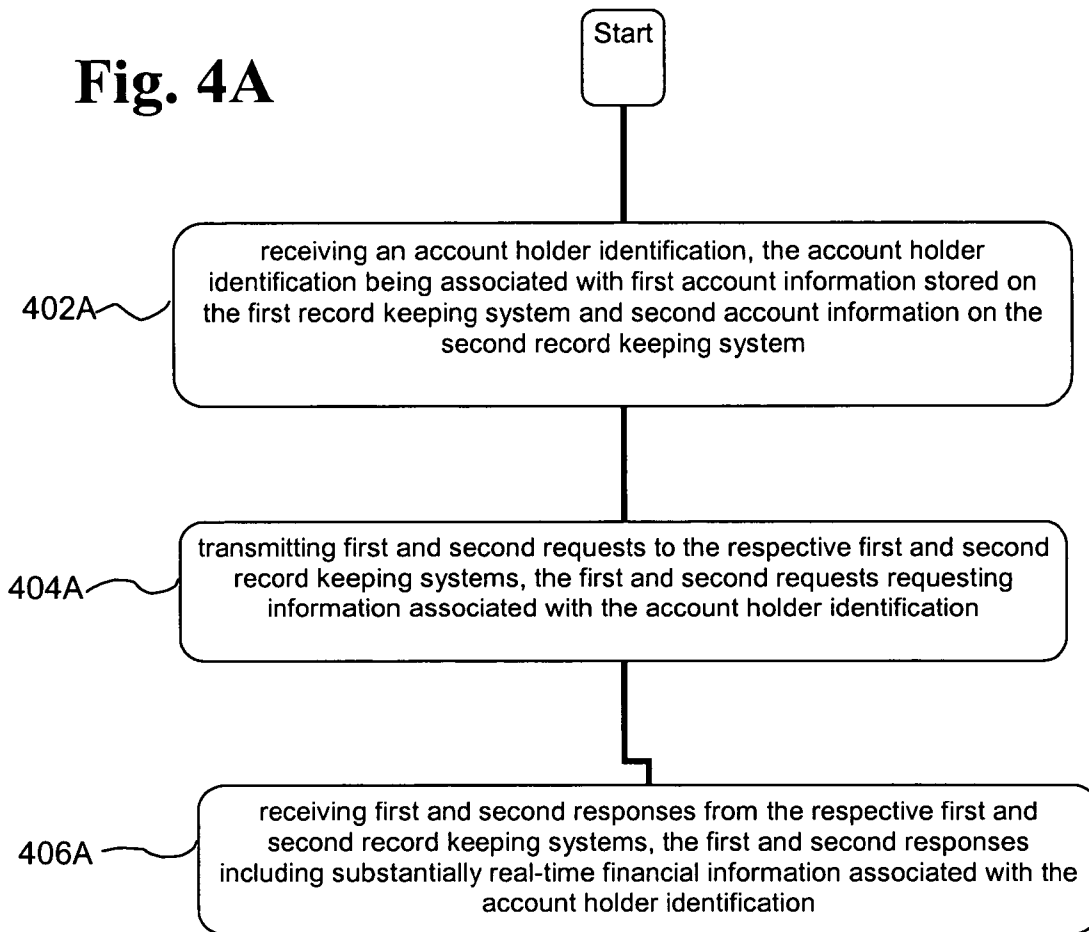


Fig. 4B

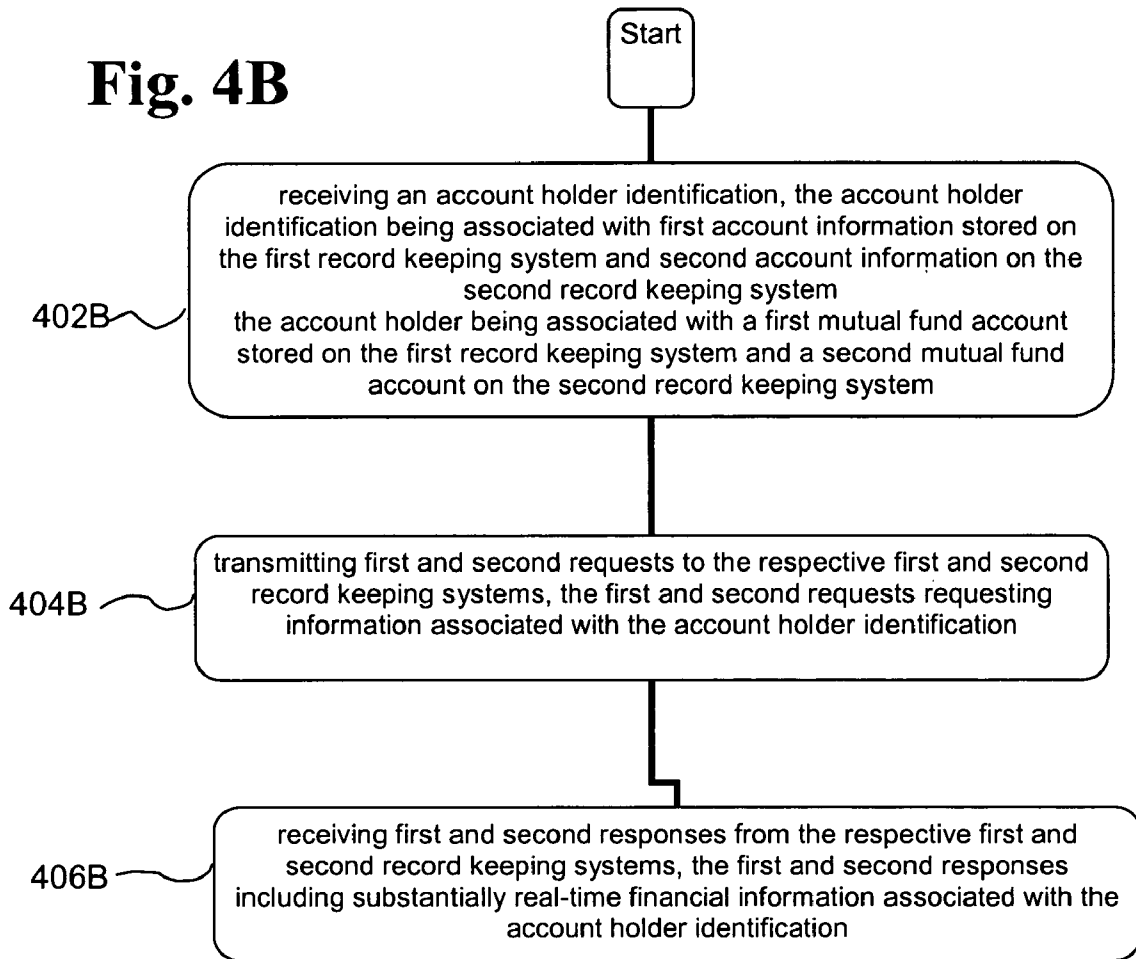


Fig. 4C

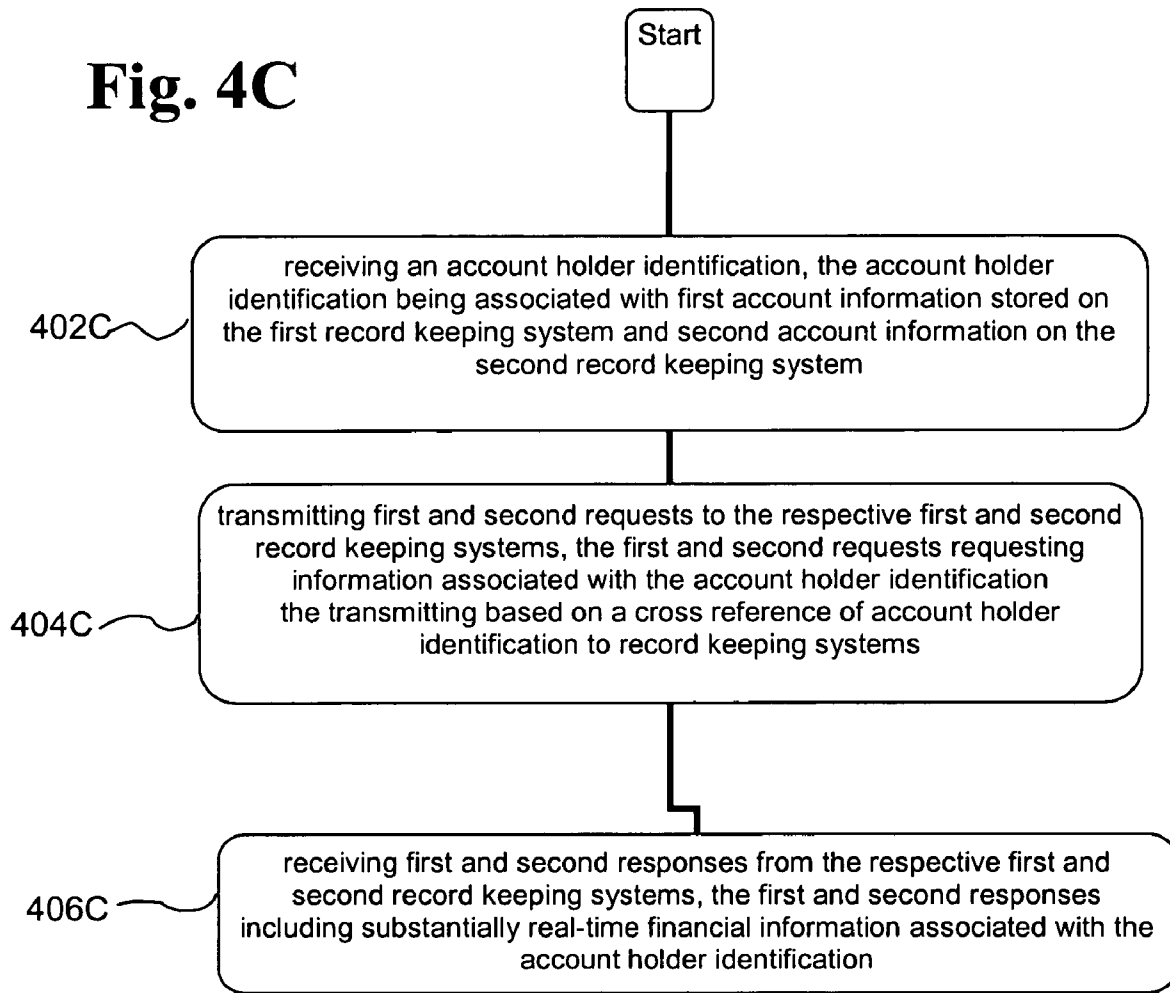


Fig. 4D

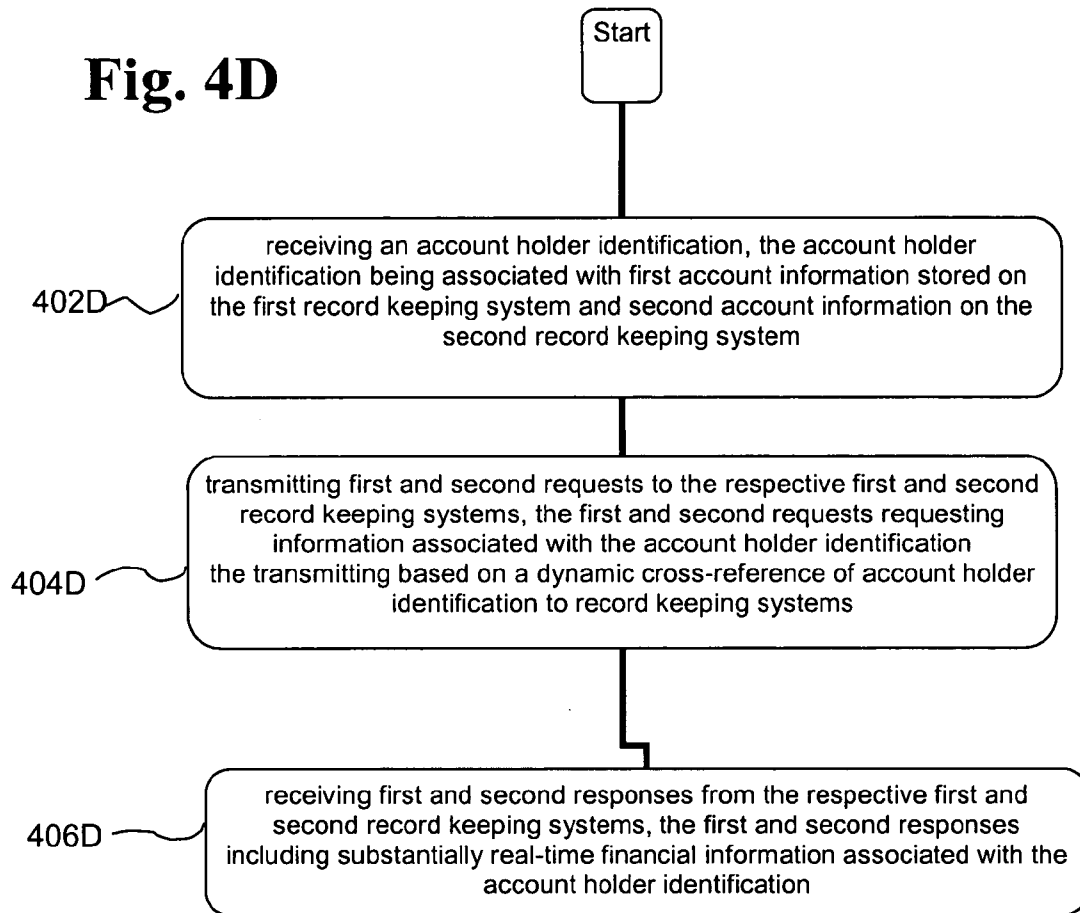


Fig. 4E

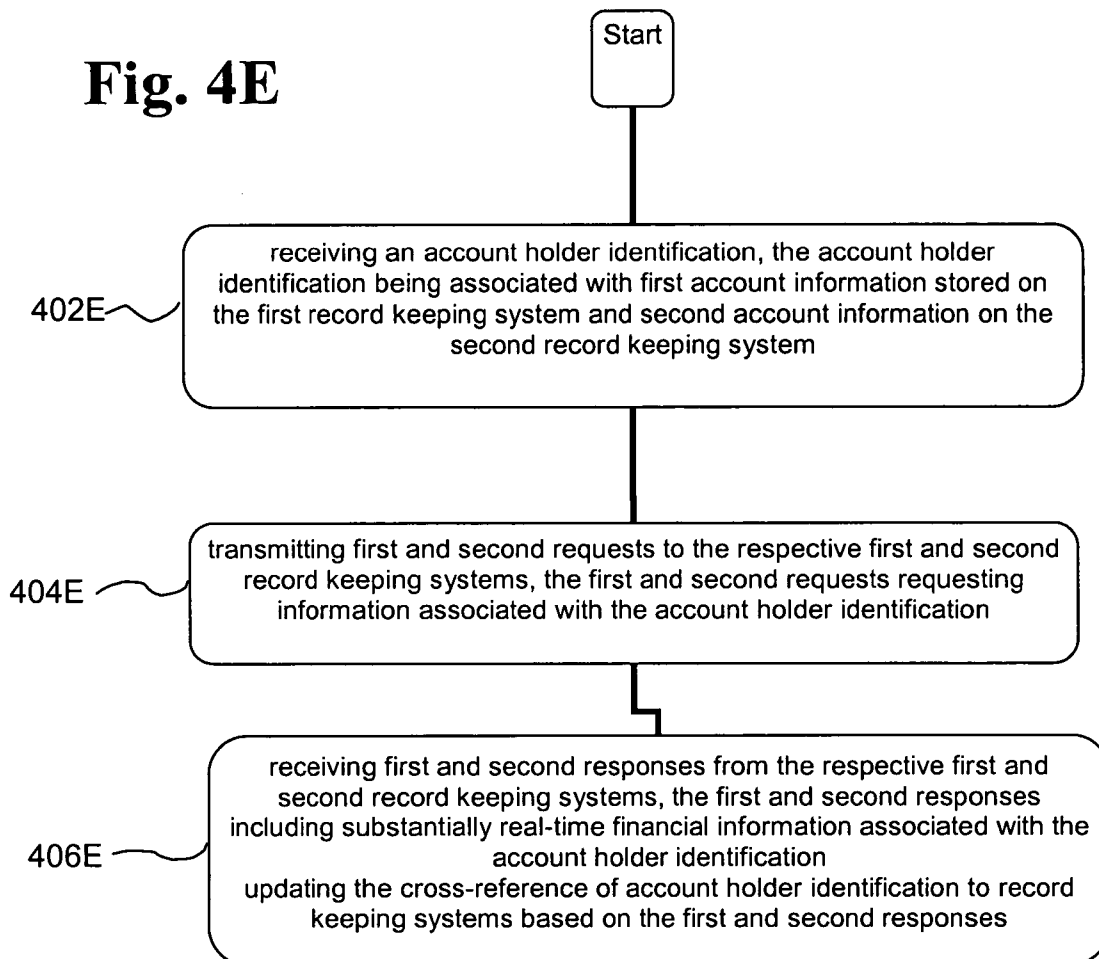


Fig. 4F

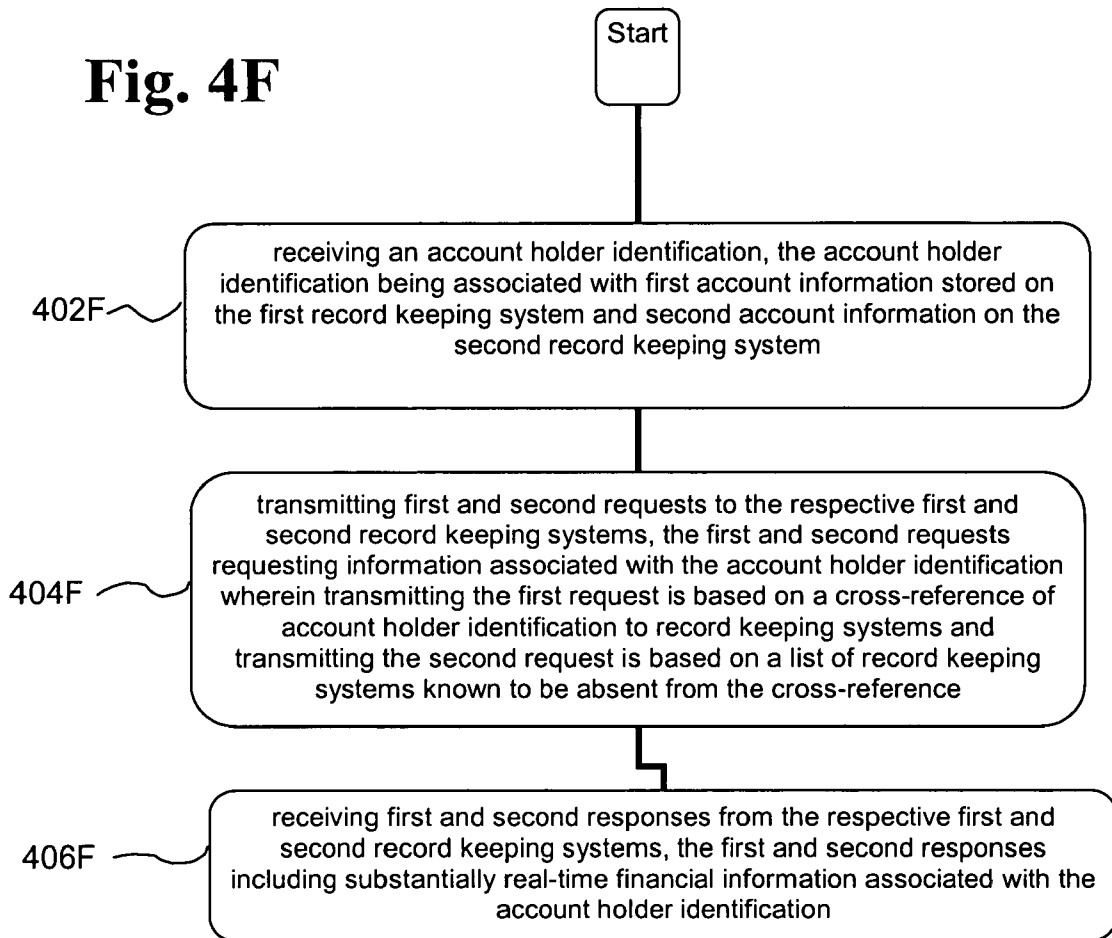


Fig. 4G

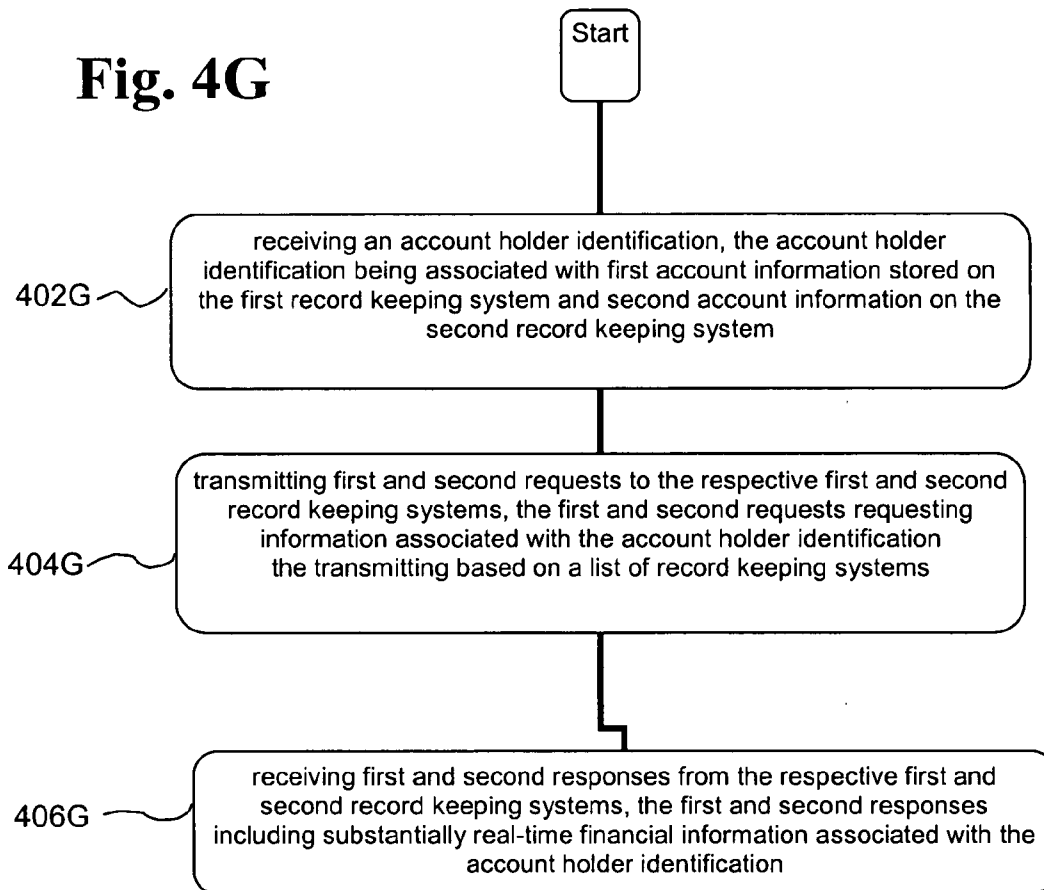


Fig. 4H

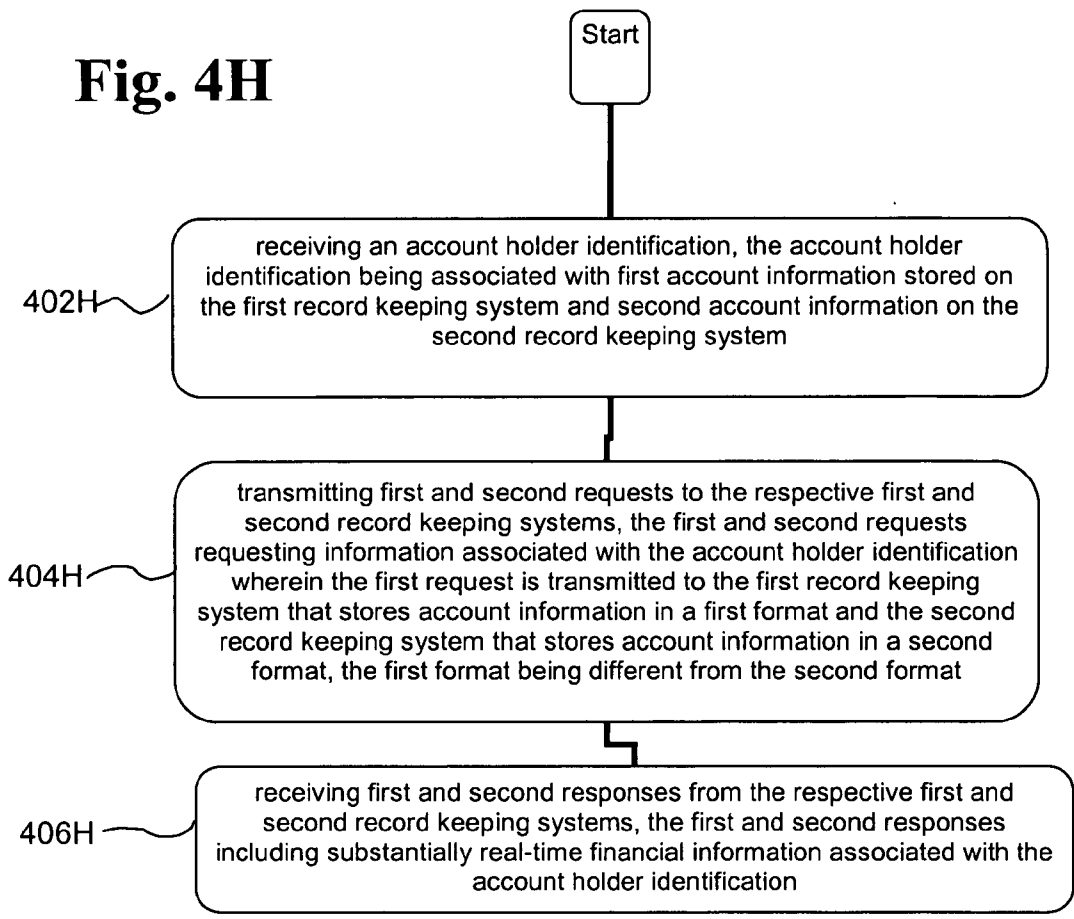


Fig. 4I

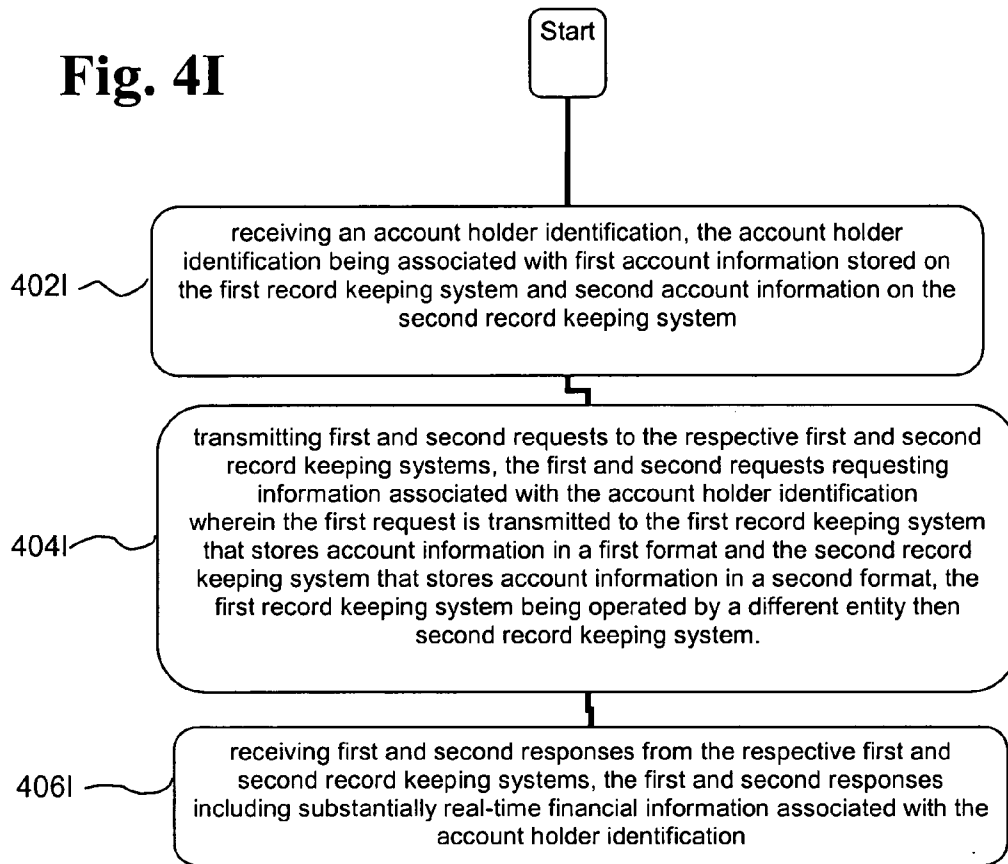


Fig. 4J

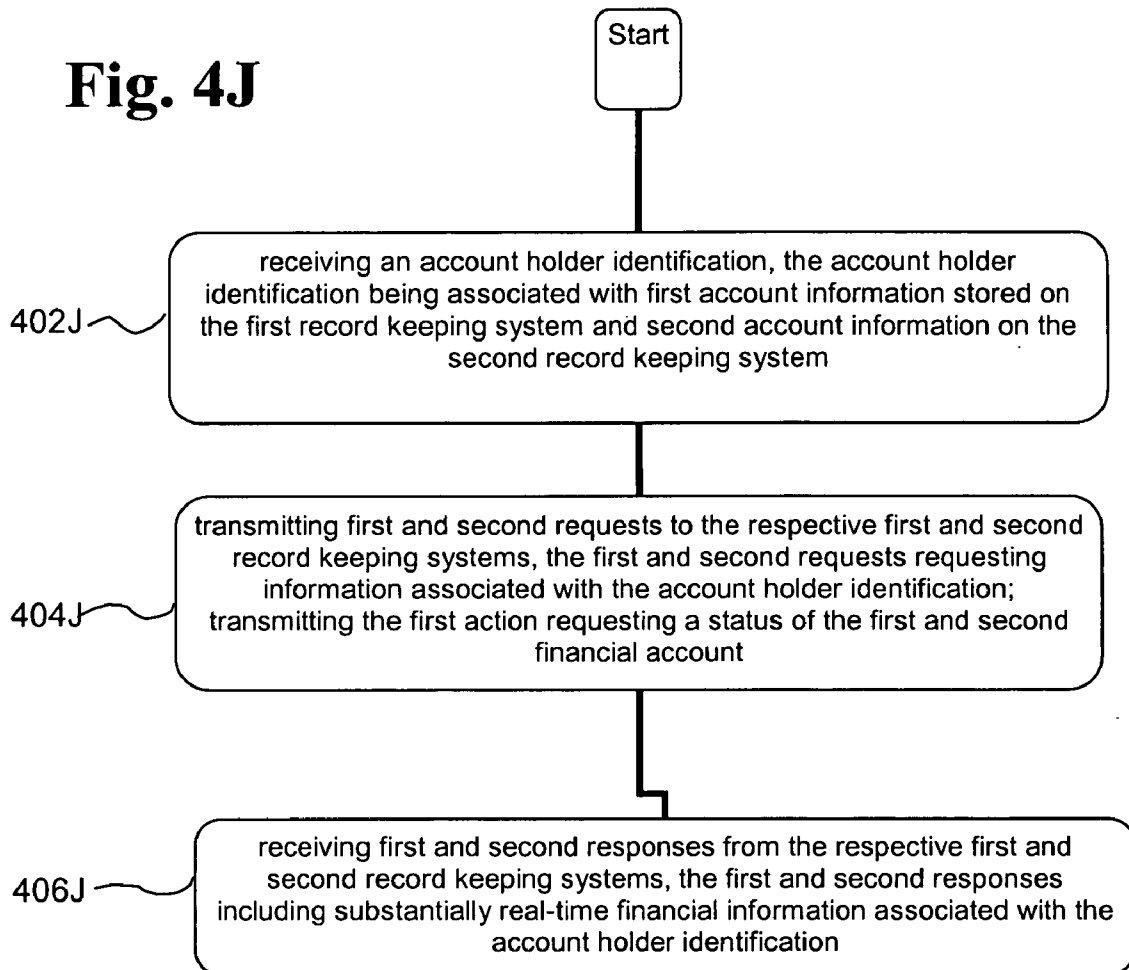


Fig. 4K

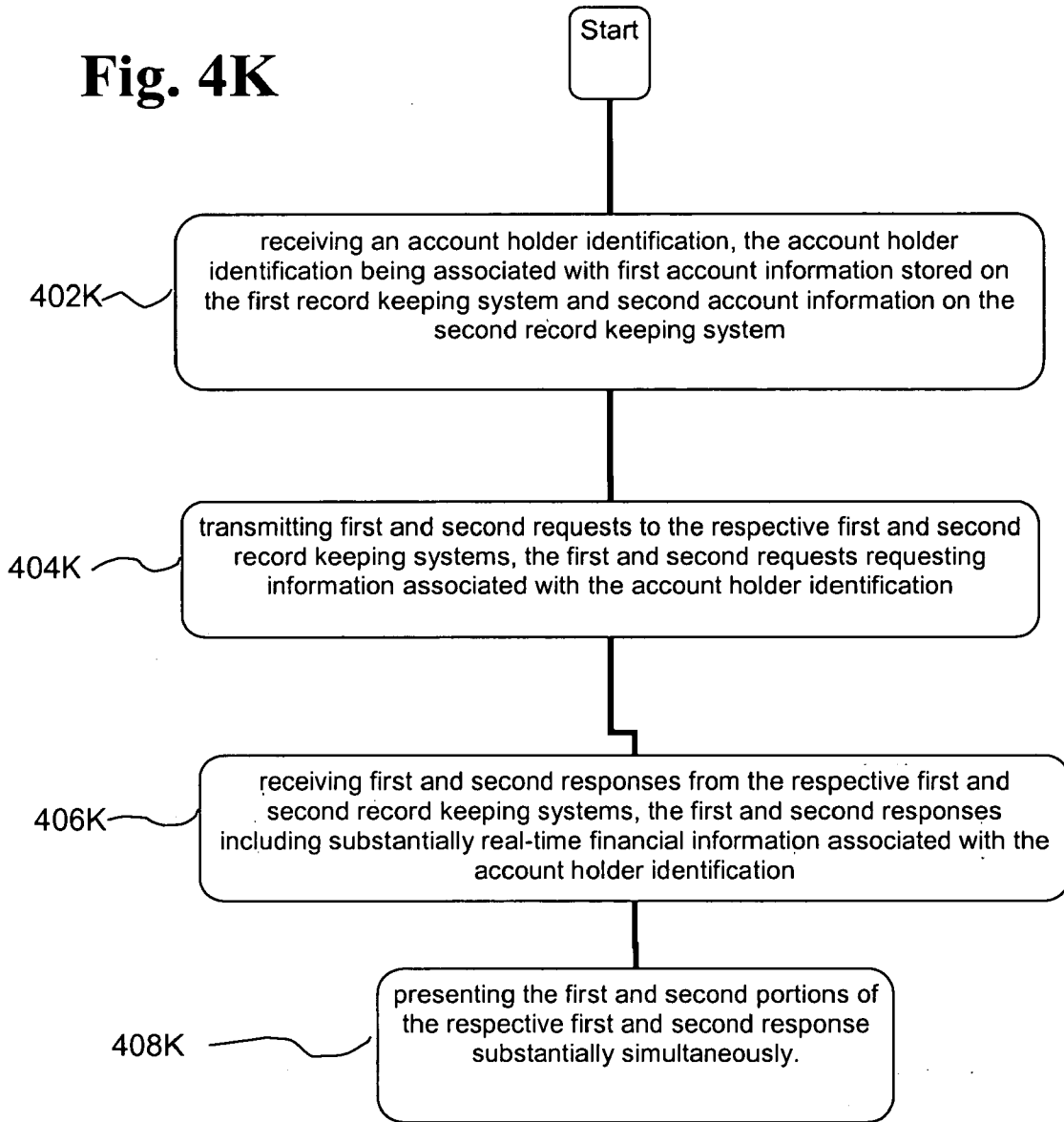


Fig. 4L

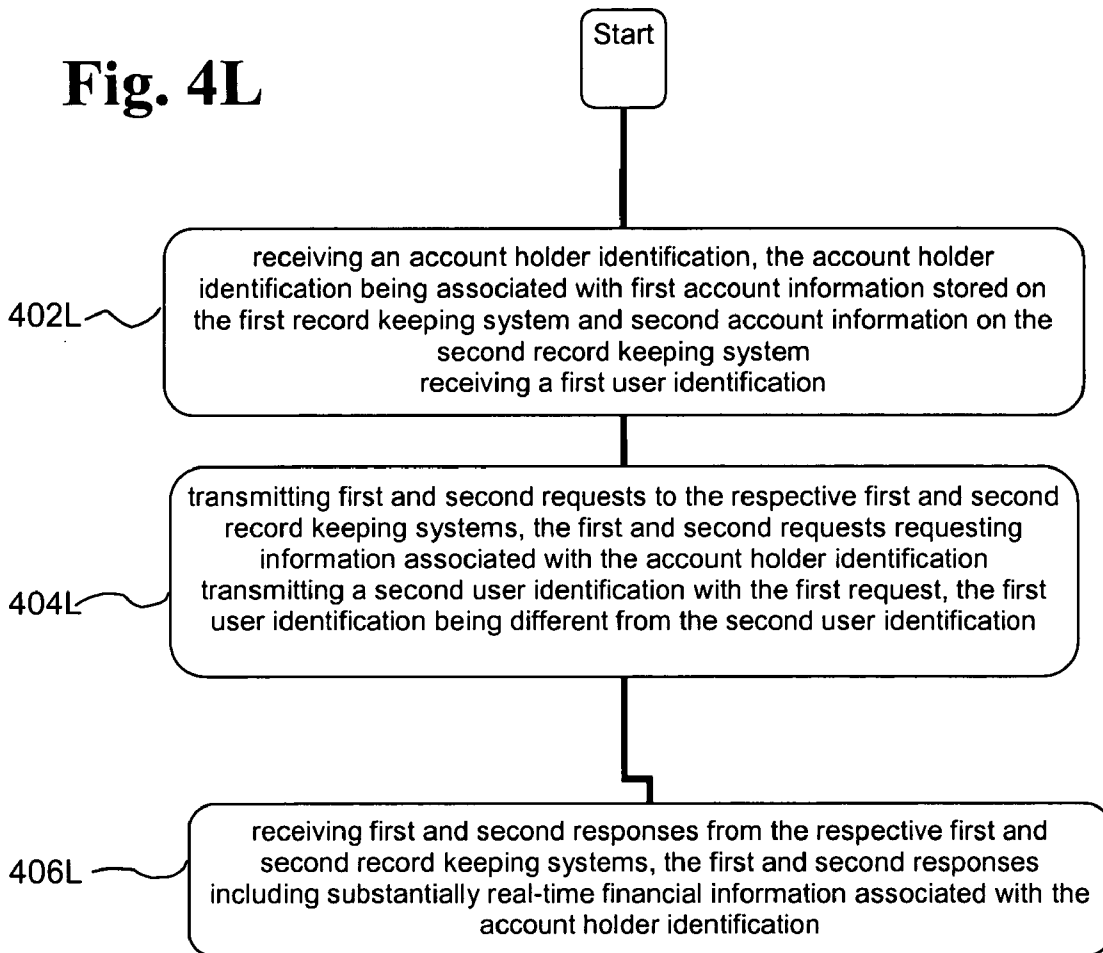


Fig. 4M

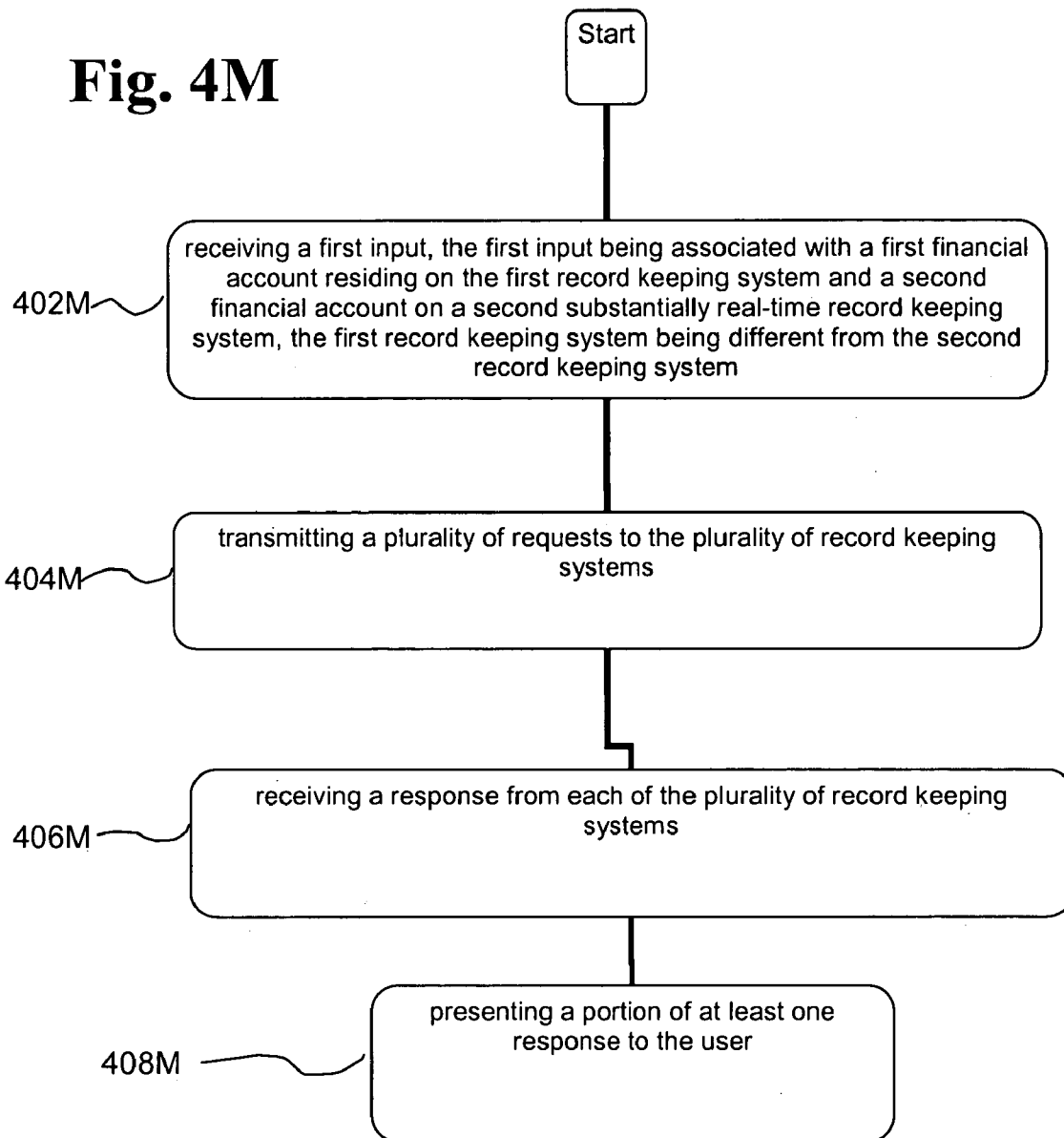


Fig. 4N

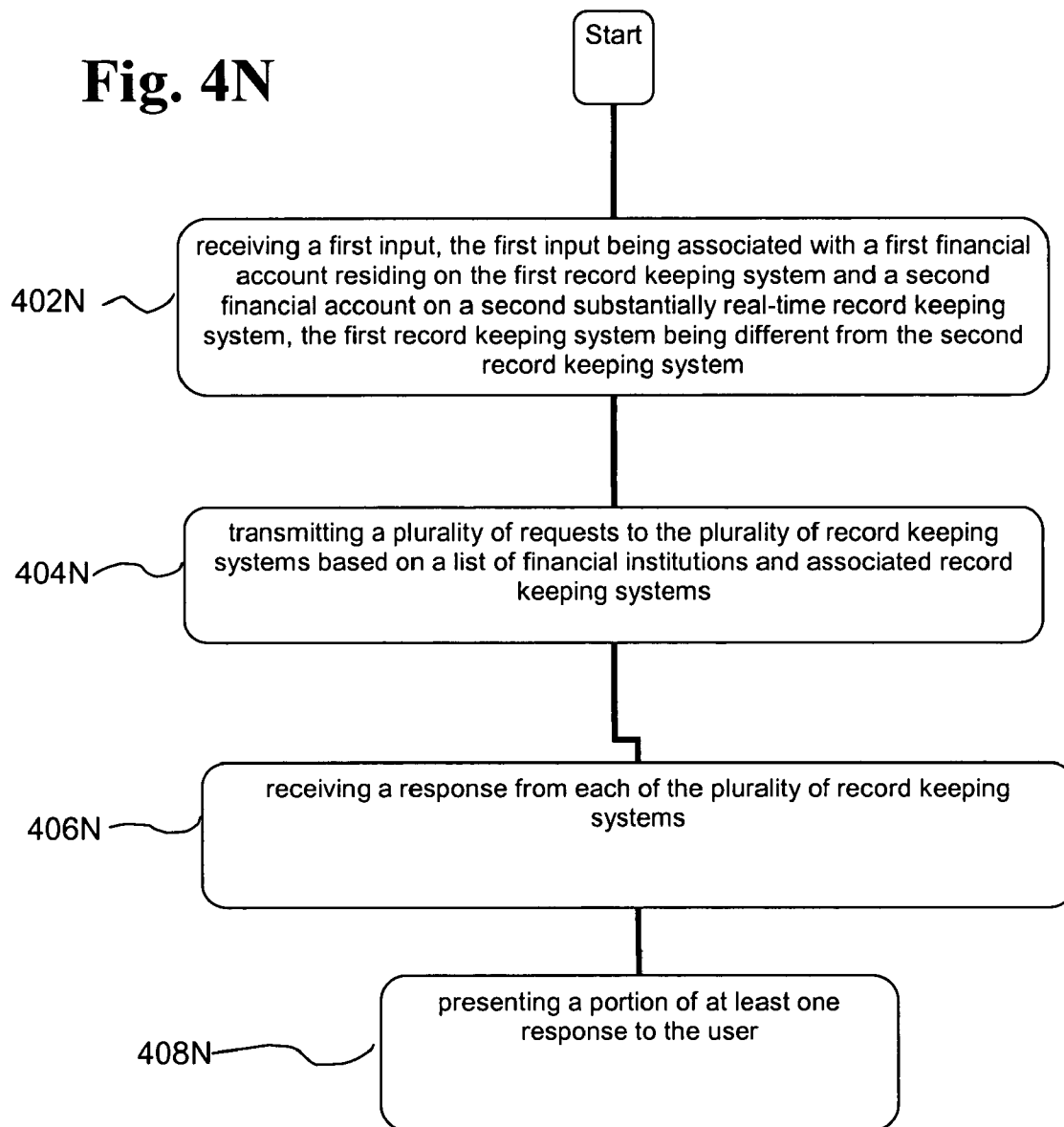


Fig. 40

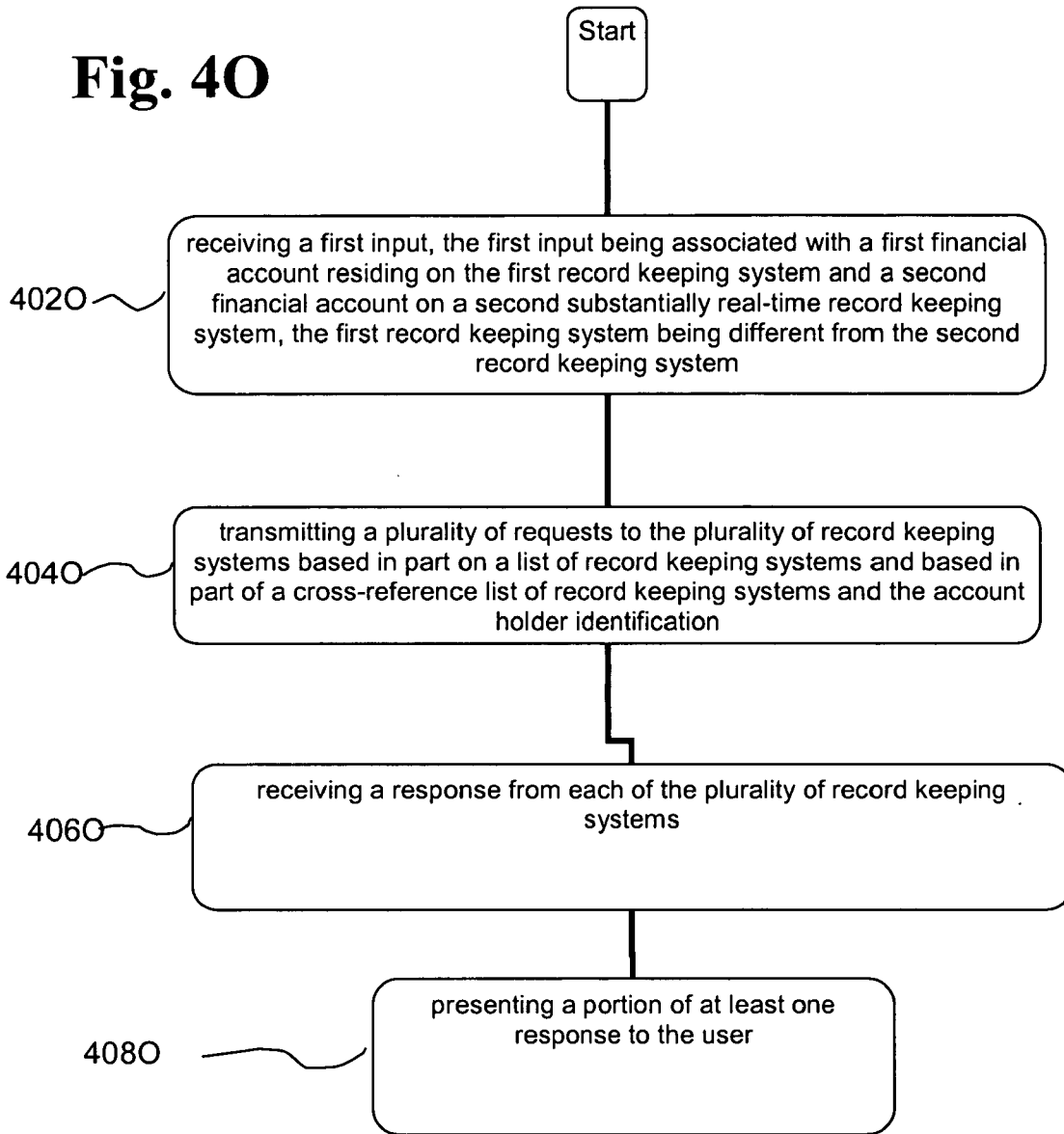
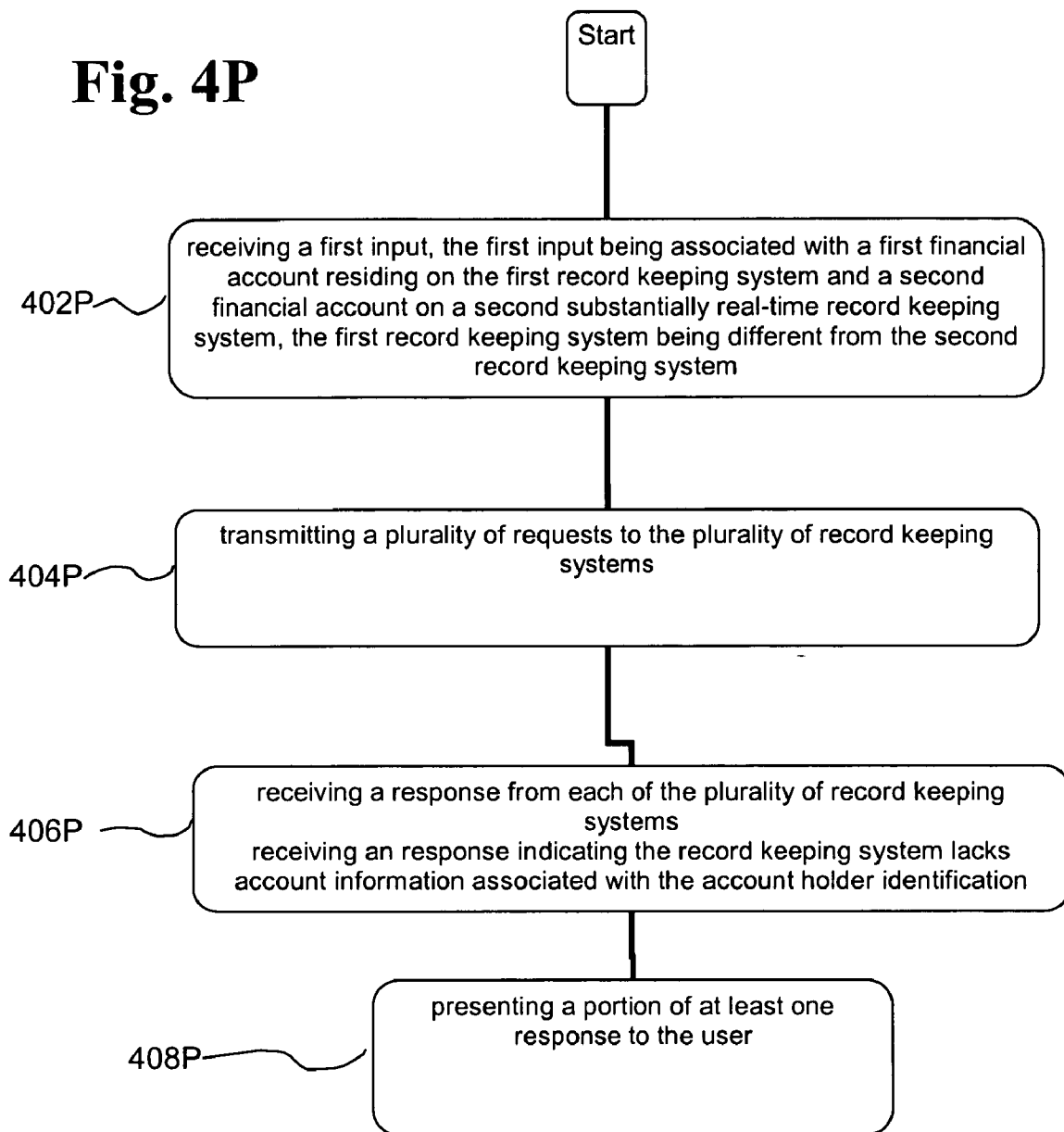


Fig. 4P



Vision Mutual Fund Gateway Monthly Billing Summary Report			
Report Number: R07960			
Source program: B10108			
Job: MFJM426B			
System: DFE			
Corp Billing ID			
Management Code: BU			
Billing Period: 11/1/99-11/30/1999			
Billable inquiry Views:	325	View Charges	\$ 16.25
Billable Vision ID's:	80	Vision ID Charges	\$ 400.00
Billable Purchases	100	Purchases	\$50.00
Billable Redemptions	35	Redemptions	\$17.50
Billable Exchanges	30	Exchanges	\$15.00
Billable New Accounts	50	New Accounts	\$25
Total			\$523.75

Figure 5

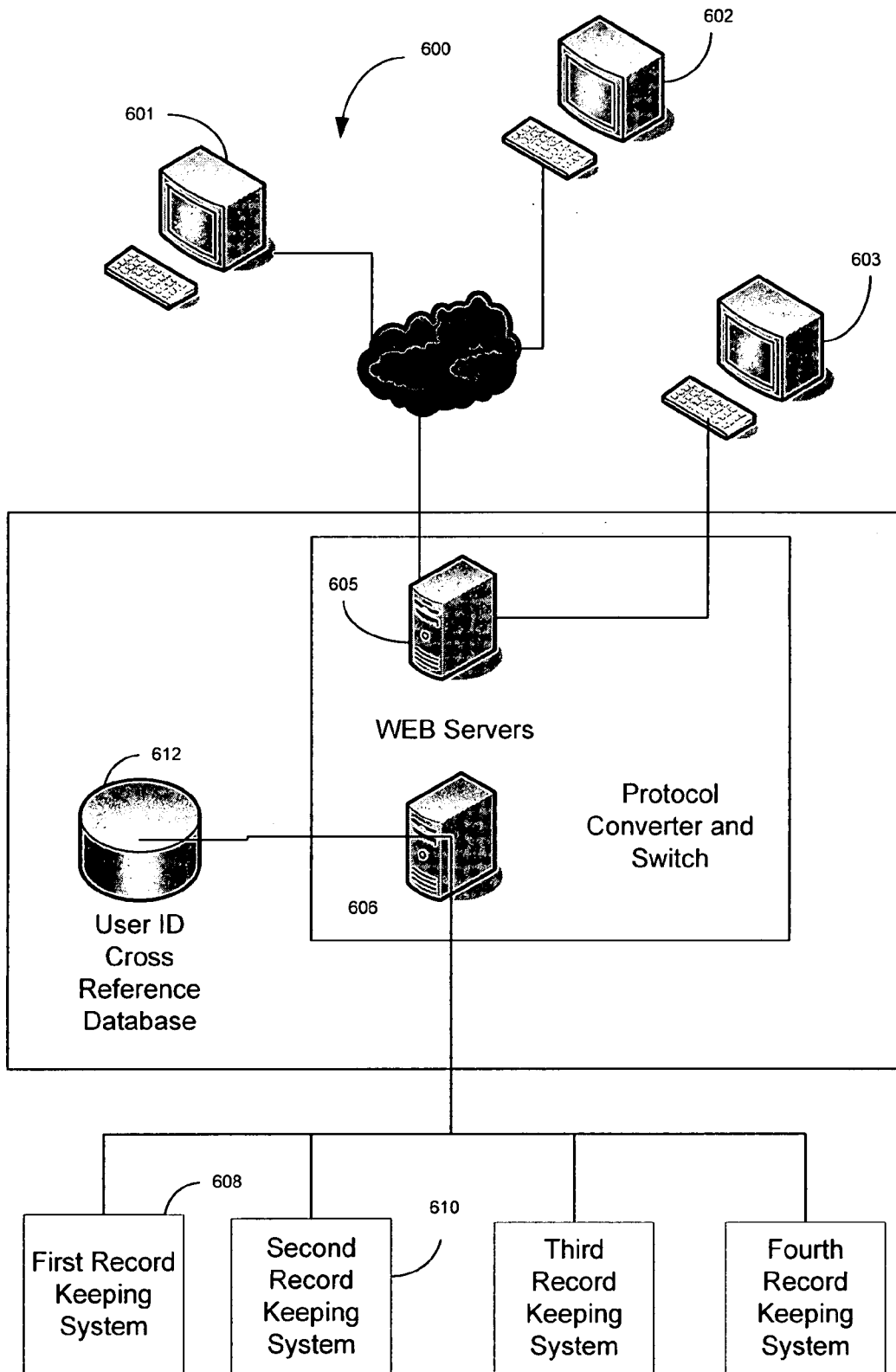


Figure 6

700

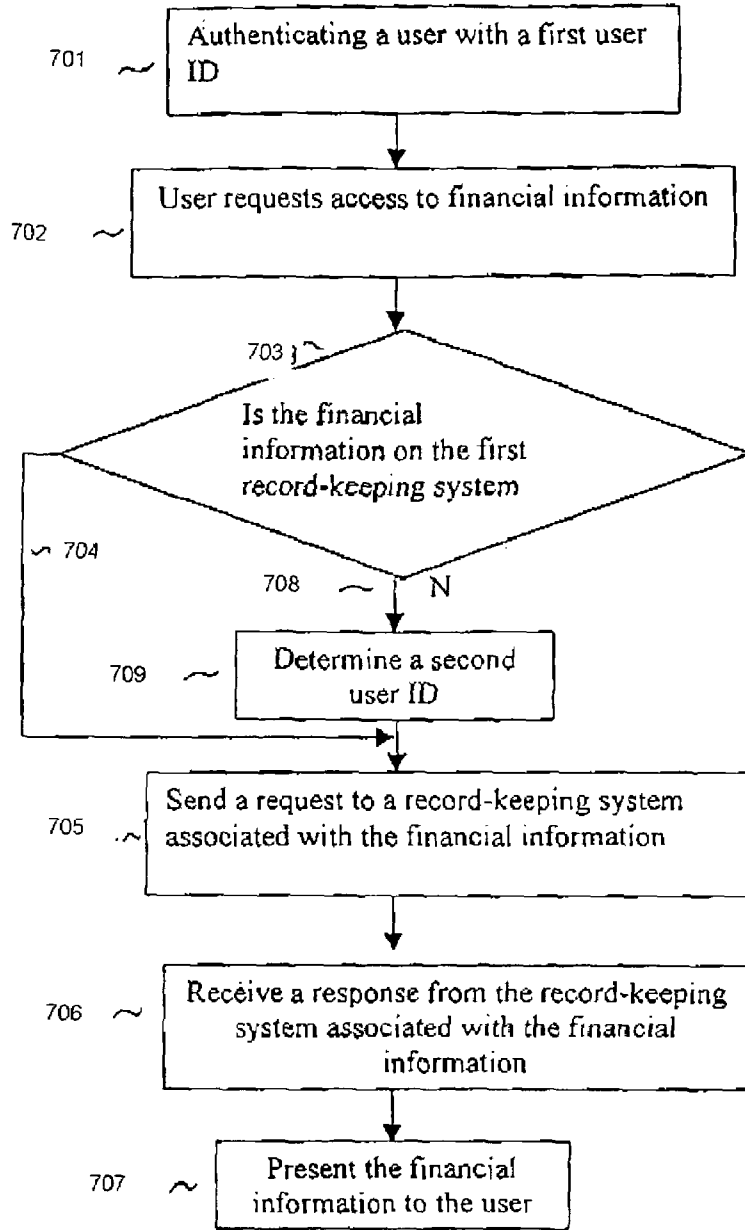
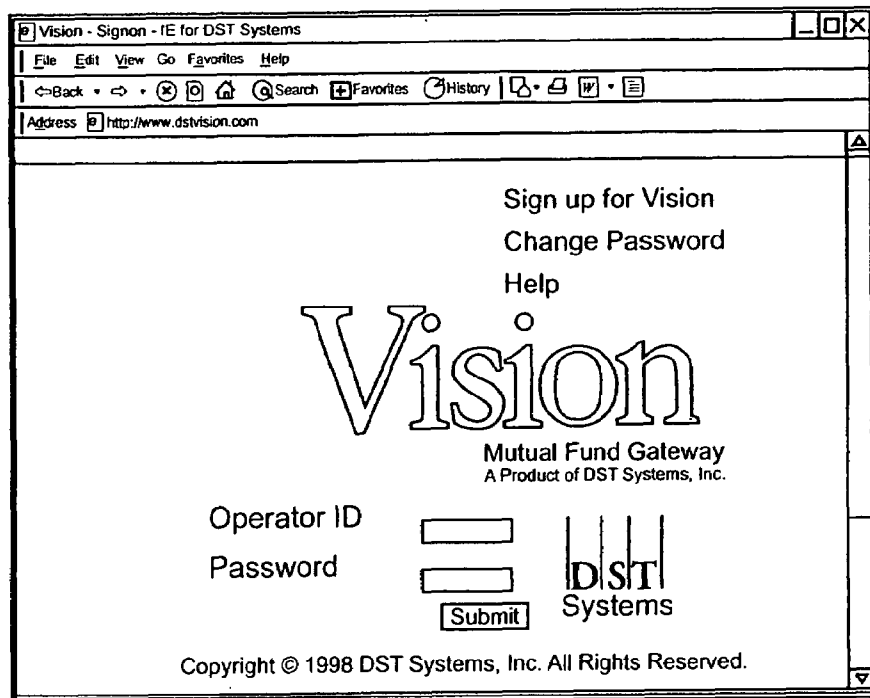
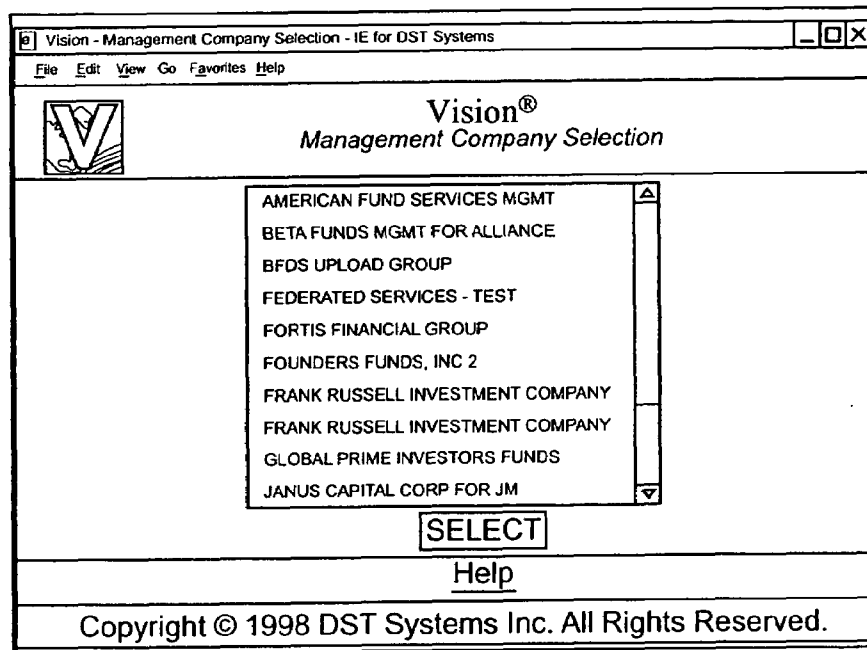


FIGURE 7



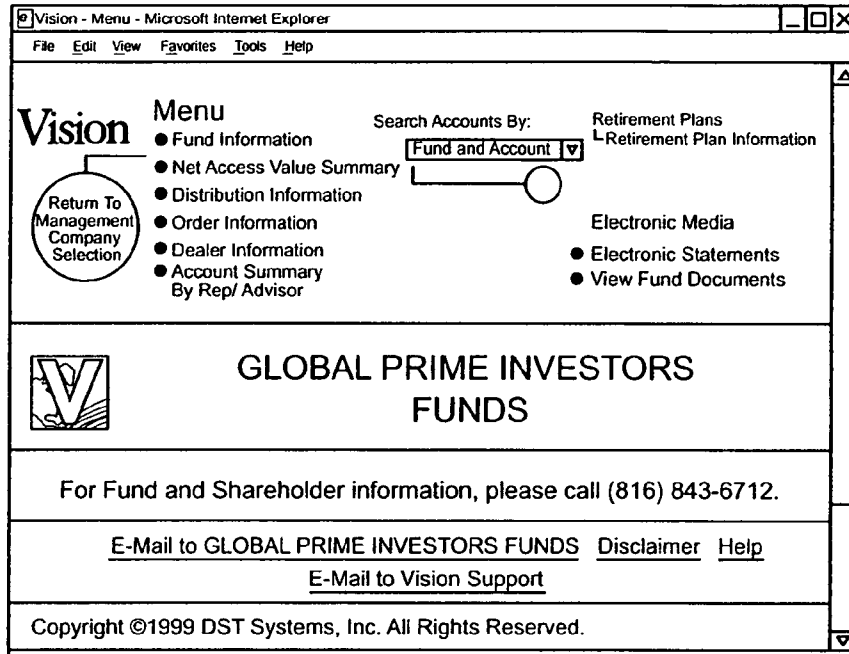
Sign on window

FIGURE 8(A)



Management Company Selection window

FIGURE 8(B)



Vision Menu Window

FIGURE 8(C)

Description	Confirm Date	Trade Date	Price	Discount Schedule	Shares	Share Balance
Transaction Sequence #	Transmitter ID	Batch #	Schedule	Category #	Cash	
Interest Credit	09/03/1997	09/03/1997	\$1,000	00	3.0500	17,341.800
0000007	011 / 003	9999 / 888	PM	00	No	
Interest Credit	08/27/1997	08/27/1997	\$1,000	00	3.2400	17,337.5200
0000006	011 / 003	9999 / 811	PM	00	No	
Interest Credit	08/27/1997	08/27/1997	\$1,000	00	9.1800	17,323.3400
0000005	011 / 003	9999 / 811	PM	00	No	

Shareholder Account History Window

FIGURE 8(D)

900

Columns	Field Name	Field Type	M/O	Values	Description
1-4	Project ID	Alpha 4	M		Project identifier used to identify the layout. Assigned by DST.
5-7	Header Version	Num 3		Send spaces or null values	Version of Header. For future use.
901 8-17	Packet Length	Num 10	M		Total length of data stream including the header
18-20	Data Version	Num 3		Send spaces or null values	Version of the Data. For future use.
21-30	Data Length	Num 10	M		Length of data area, not including header (0 if no data).
902 31-47	Transaction ID	Alpha 17	M		Transaction identifier. For example, ACCTHIST@VISION. This format is <i>not</i> required. If an alternate transaction ID format is preferred, the new name and format is required for each type of transaction. The field type/length remains the same.
903 48-57	Source System ID	Alpha 10		Send spaces	Indicates the source of the message. This value is used for information purposes. DST will assign these values to the message originators. For future use.
904 58-67	Source Tag	Num 10	M	Operator defined	This field can be used by the source application to attach an "identification" tag to individual transactions. This value will be returned in the response header.
905 68-77	Operator ID	Alpha 10	M	Vision or External Fund ID	The Operator ID (Vision) used to log on.
78-85	Password	Alpha 8	M	Send spaces	
86-89	Return Code	Num 4	M	0000-Normal 0010-Error	Return Code.
906 90-97	Error Code	Alpha 8	O		Error Code from the target system. This could be used as a reference if the Vision operator should call the fund.
98-337	Error Data	Alpha 240		Send spaces	DST use only.

FIGURE 9

Error Messages

1000

Error Code	Error Message	Description
ACTF0001	The request failed because the Host System has detected a problem. Please call the Vision Help line at 800-435-4112 and report the error code below for assistance.	Severe system error has occurred.
ACTF0002	The system is currently performing updates as a result of today's business. The information you have attempted to retrieve is temporarily unavailable. Please try again later. We apologize for the inconvenience. Please click the Back button on your browser to return to the previous page.	Files unavailable for read access due to system updates or file outages.
ACTF0003	The request failed because your Operator ID is not authorized to perform this function. Please call the Vision Help line at 800-435-4112 for assistance.	Operator ID not authorized.
ACTF0013	The fund is currently unable to process this request within the allotted time.	The fund is unable to process the request, either because of network overload or because the request cannot be processed within the allotted time.

FIGURE 10

Transaction Fixed Request Data

1100

Columns	Field Name	Field Type	M/O	Values	Description
1-13	Security Issue ID	Alpha 13	M		Identifies the mutual fund. This field contains a two-character country code (00), a nine-character CUSIP, a one-character check digit (0), and a one-character test code (P).
14-33	Account Number	Alpha 20	M		The unique identifier for a shareowner account within a mutual fund.
34-58	Index	Alpha 25	M		Index to request additional accounts when list is longer than a single request.

FIGURE 11

1200
Transaction Variable Repeatable Response Data

Columns	Field Name	Field Type	M/O	Values	Description
1-7	Key Suffix	Num 7	O		Transaction sequence number in the history.
1201 8-13	Transaction Identifier	Alpha 6	O		Indicates the type of transaction. Formatted as xxx/xxx (the 'I' is hard coded after the third character).
1202 14-28	Shares	Num 15	M	11.4	Number of shares involved in the transaction.
1203 29-43	Gross Amount	Num 15	M	13.2	Dollar amount of the transaction.
1204 44-58	Running Balance	Num 15	M	11.4	Cumulative share balance of account.
1205 59-68	Confirmation Date	Char 10	M	MM/DD/YYYY	Date transaction was processed.
69-78	Trade Date	Char 10	M	MM/DD/YYYY	Date transaction was priced.
79-87	Price	Num 9	M	5.4	Price used for the transaction.
88-94	Batch Number	Num 7	O		Transaction processing group number.
95	Pre/Post Noon	Alpha 1	O	B=Before Noon A=After Noon	Determines if the transaction occurred before noon or after noon.
96-97	Discount Category	Num 2	O		Code indicating the price break a shareholder will receive on new shares purchased.
98	Certificate Issue Code	Alpha 1	O	Y/N	Indicates certificate was issued on a purchase transaction.
1206 99-128	Transaction Description	Alpha 30	M		The alpha description of the transaction.

FIGURE 12

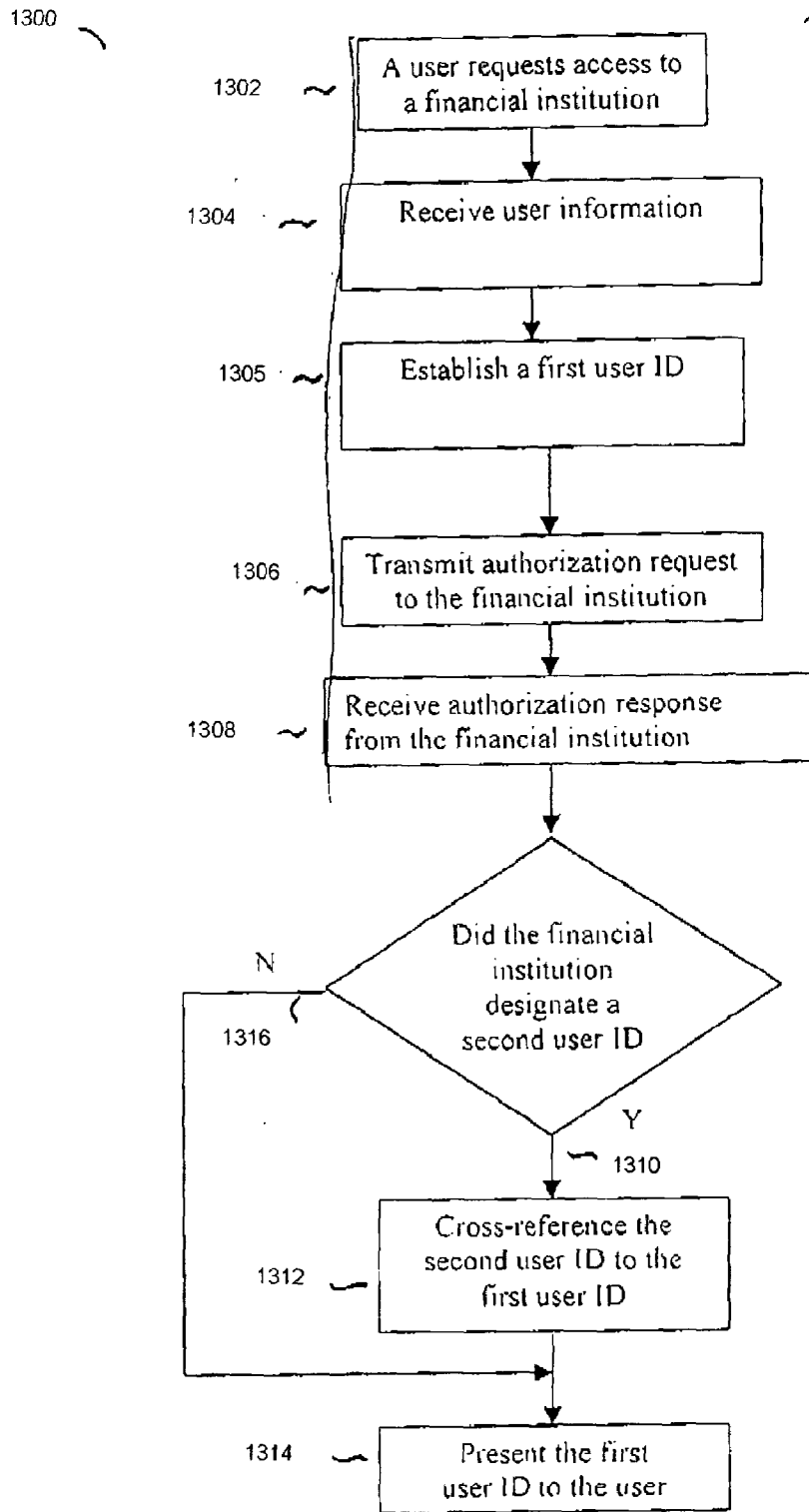


FIGURE 13

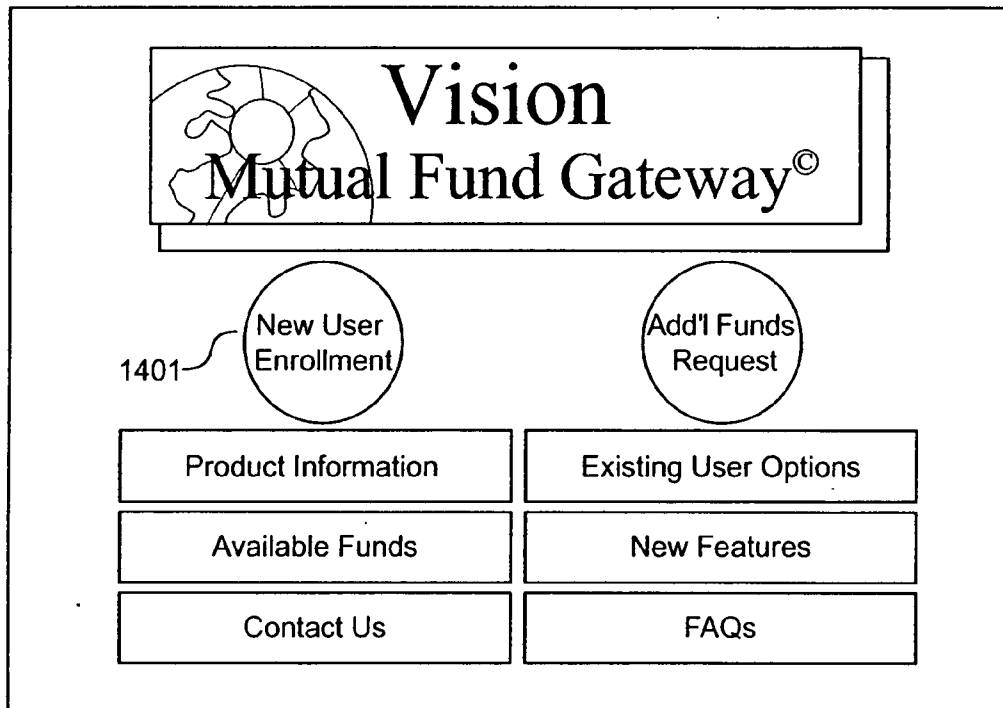


FIGURE 14(a)

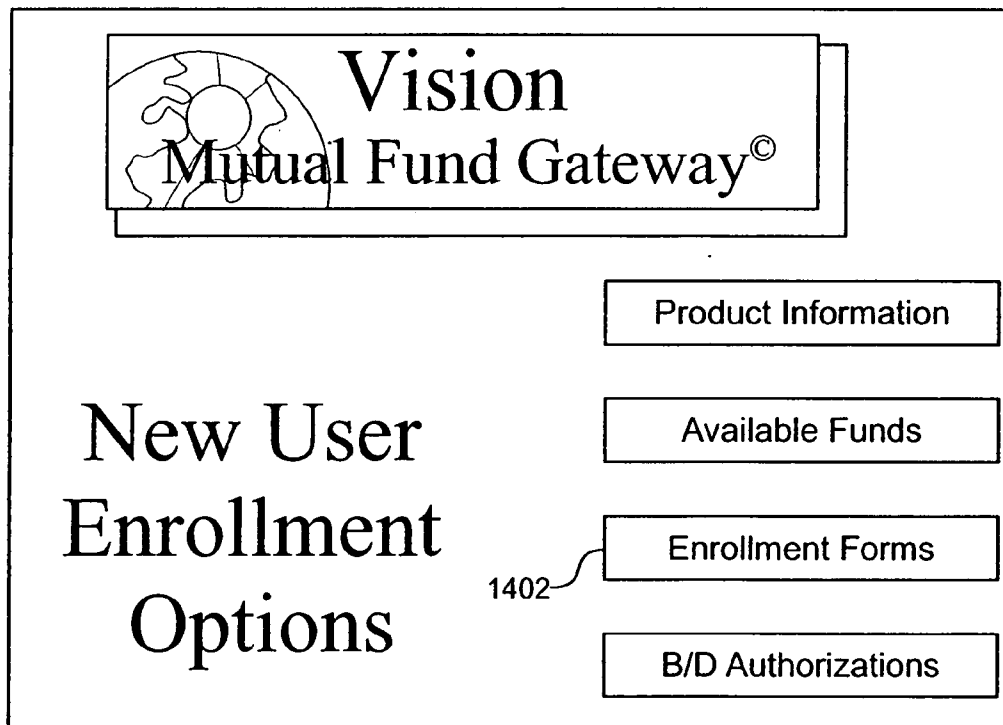



FIGURE 14(b)



Enrollment Form

Select the level at which you will access Vision.

1403	Dealer	Provides access to all accounts assigned to your broker/dealer firm.
1404	Branch	Provides access to all accounts assigned to your branch office.
1405	Rep	Provides access to your individual accounts in which you are the representative or advisor of record. Each representative must complete his or her own enrollment.
1406	Tax ID	Provides access to accounts grouped under a single tax identification number. Tax ID access may be appropriate for trust companies and banking institutions. Tax ID access is not available at the shareowner Social Security level.

FIGURE 14(c)



Enrollment Form Dealer Access

This enrollment form provides access to all accounts assigned to your Broker/Dealer firm. If you are in the incorrect form, please click "Cancel & Close Window". If this is the correct form for the access you require, please scroll down to complete. Fields marked in bold are required.

Broker/Dealer Name:

Last: First:

Contact Person:

Contact's E-Mail Address:

Correspondence regarding Vision access is communicated by e-mail; without a valid e-mail address, some communication may be delayed.

Mailing Address:

City:

State or Province: **ZIP Code:** -

Country: ▾

Phone Number: () - ext.

Fax Number: () -

Number of Required Vision IDs:

FIGURE 14(d)



Enrollment Form Branch Access

This enrollment form provides access to all accounts assigned to your branch office. If you are in the incorrect form, please click "Cancel & Close Window".
If this is the correct form for the access you require, please scroll down to complete. Fields marked in bold are required.

Broker/Dealer Name:

Firm Name:

Contact Person: Last: First:

Contact's E-Mail Address:

Correspondence regarding Vision access is communicated by e-mail; without a valid e-mail address, some communication may be delayed.

Mailing Address:

City:

State or Province: **ZIP Code:**

-

Country: ▾

Phone Number: () - ext.

Fax Number: () -

Number of Required Vision IDs:

FIGURE 14(e)



Enrollment Form Representative Access

This enrollment form provides access to your individual accounts in which you are the representative or advisor of record. Each representative must complete his or her own enrollment. If you are in the incorrect form, please click "Cancel & Close Window". If this is the correct form for the access you require, please scroll down to complete. Fields marked in bold are required.

Fields marked in bold are required. Correct completion of this form is essential to processing your enrollment. An incomplete form will be returned to you and your enrollment will not be processed until the correct information is submitted.

(If you are not affiliated with a Broker/Dealer,
type FEE ADVISOR in this field.)

Broker/Dealer Name:

Firm Name:

Last: **First:**

Contact Person:

Contact's E-Mail Address:

Correspondence regarding Vision access is communicated by e-mail; without a valid e-mail address, some communication may be delayed.

Mailing Address:

City:

State or Province: **ZIP Code:** -

Country:

Phone Number: () - ext.

Fax Number: () -

Number of Required Vision IDs:

FIGURE 14(f)

Fig. 15A

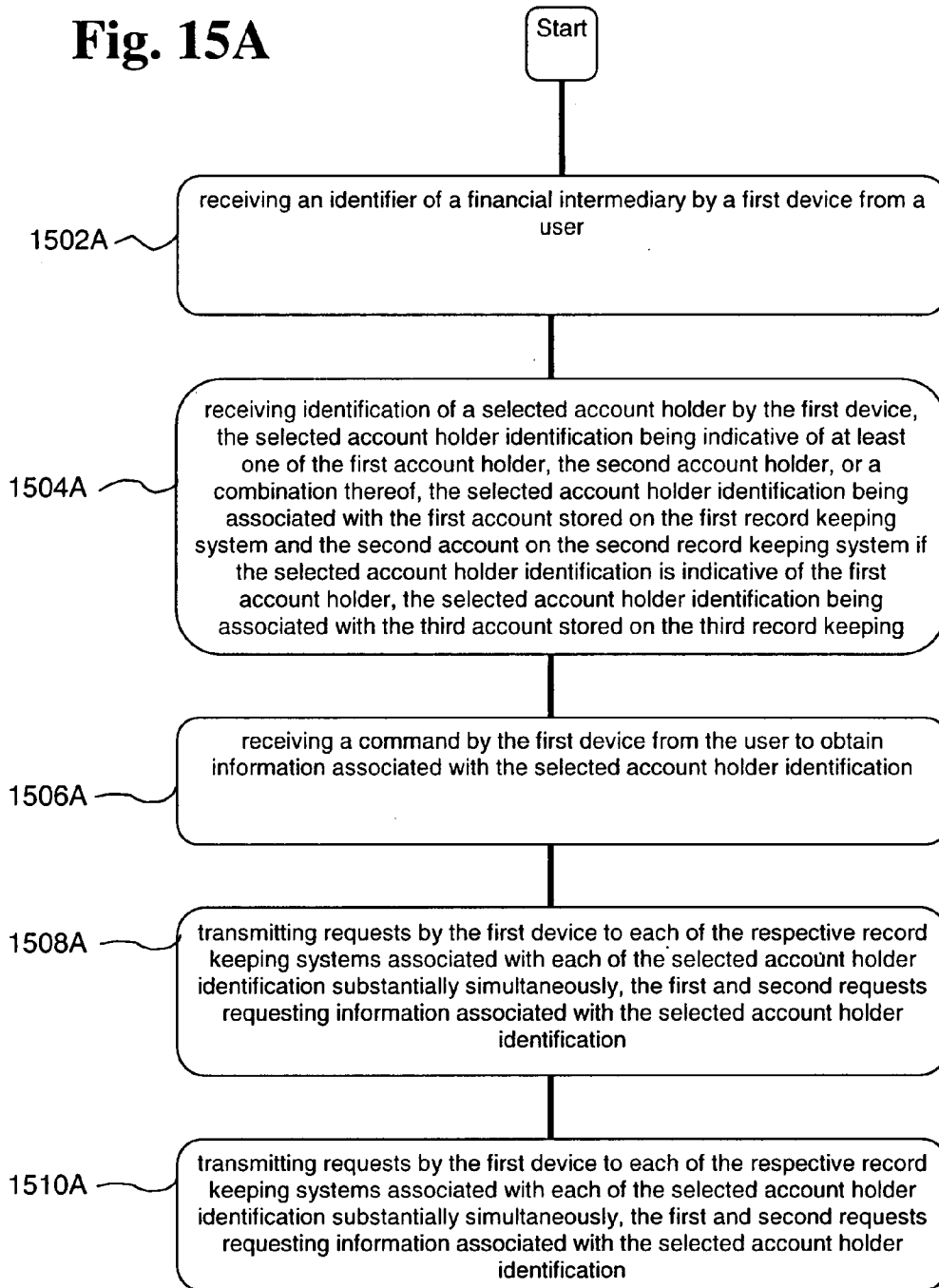


Fig. 15B

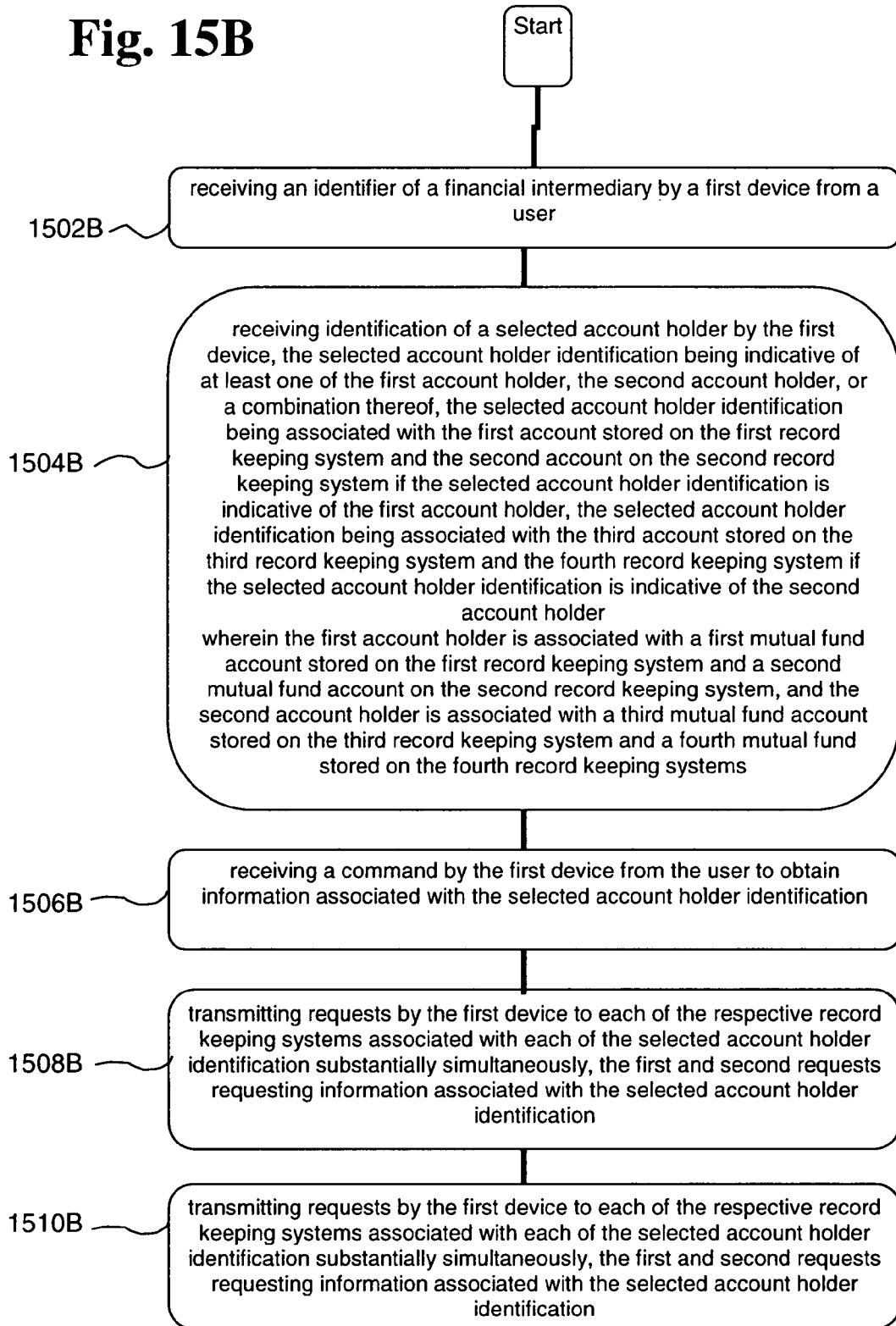


Fig. 15C

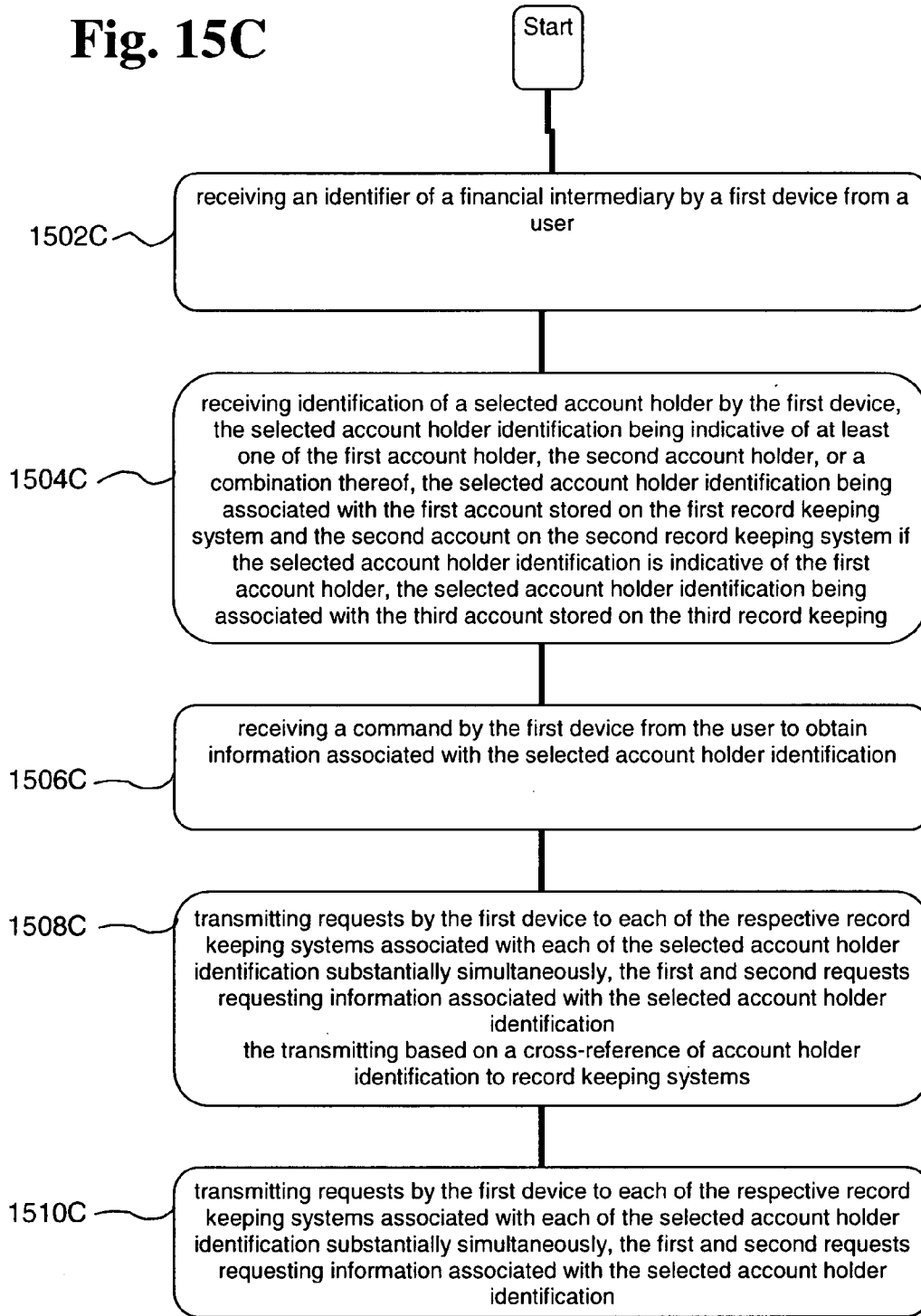


Fig. 15D

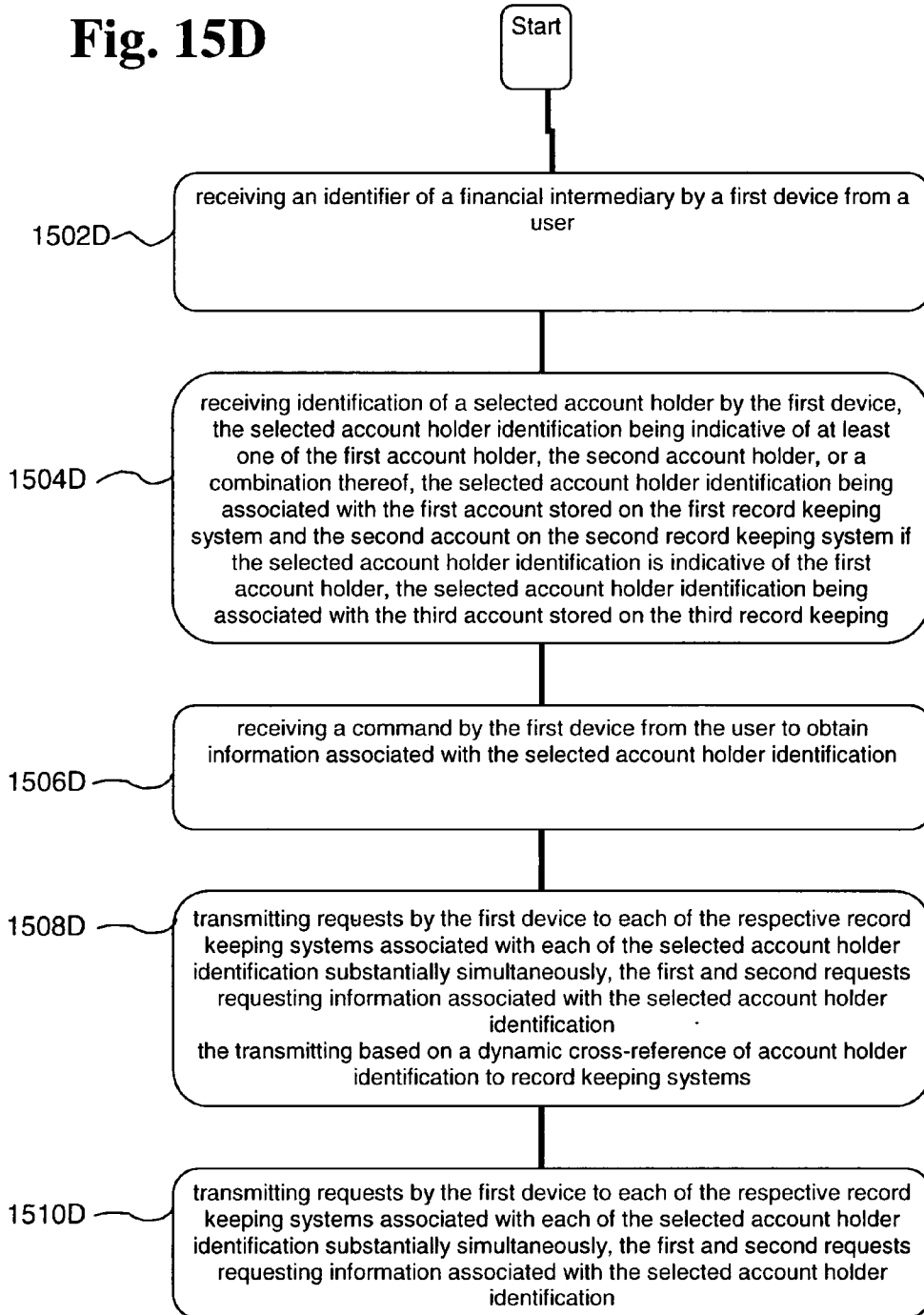


Fig. 15E

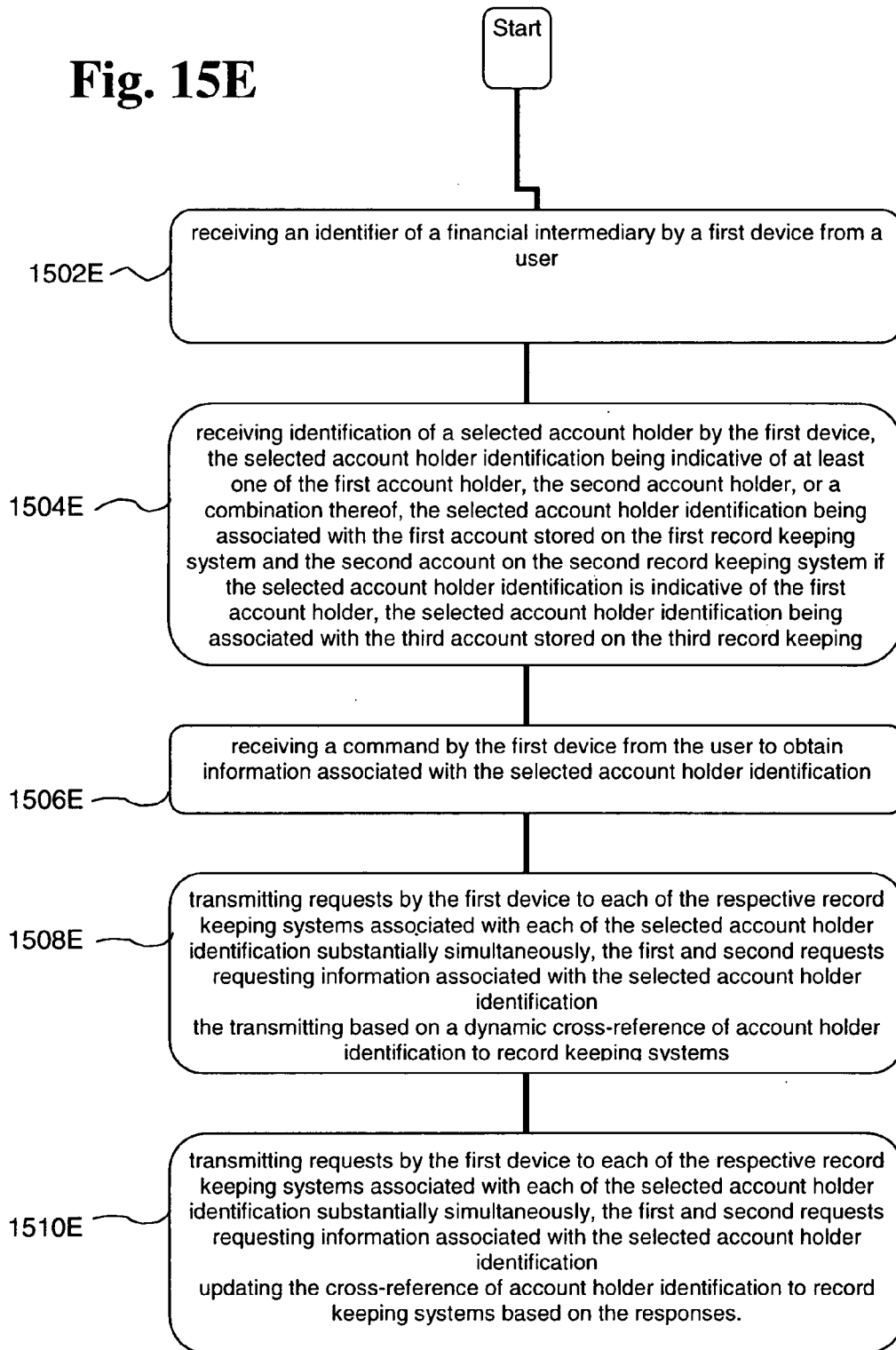


Fig. 15F

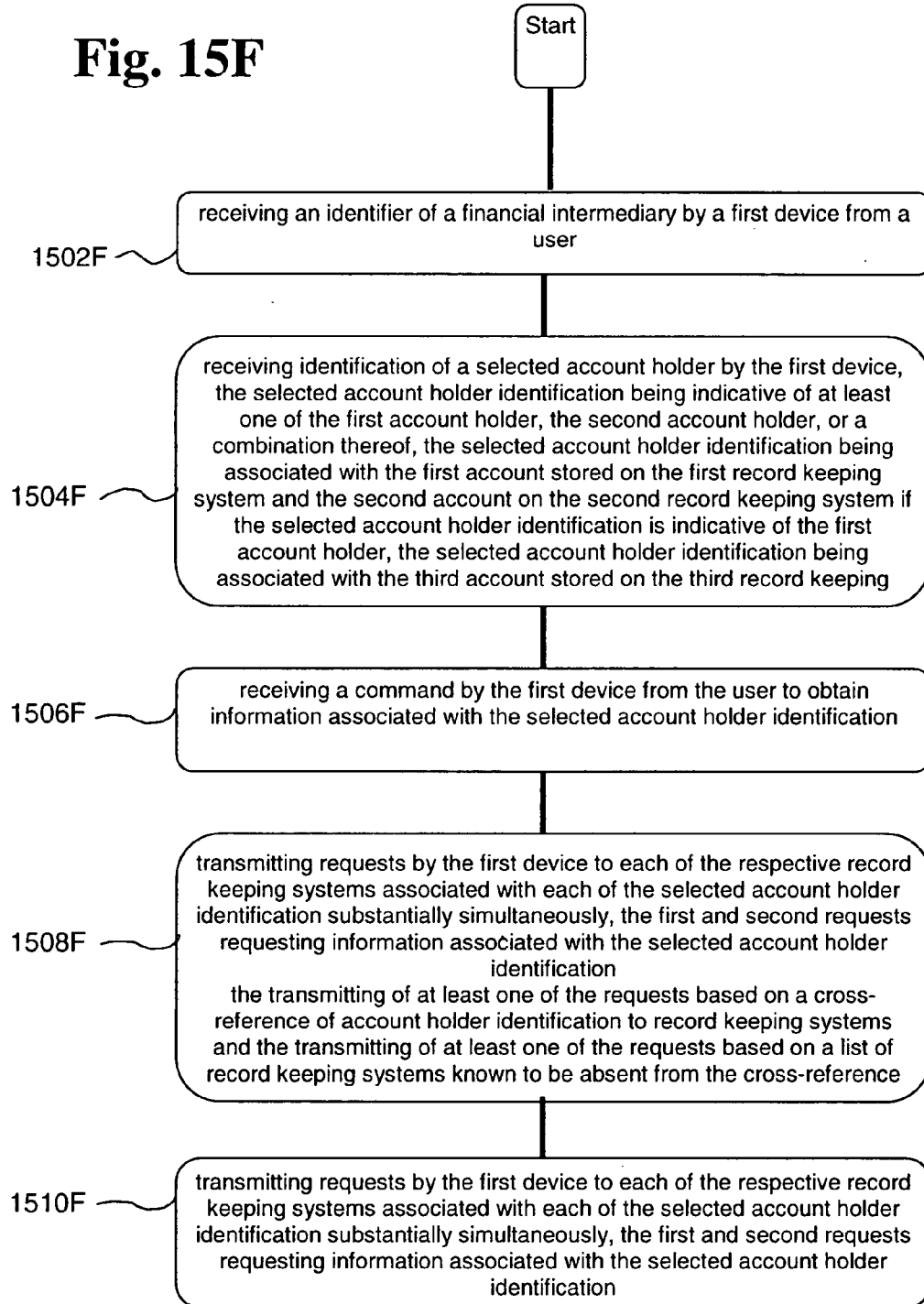


Fig. 15G

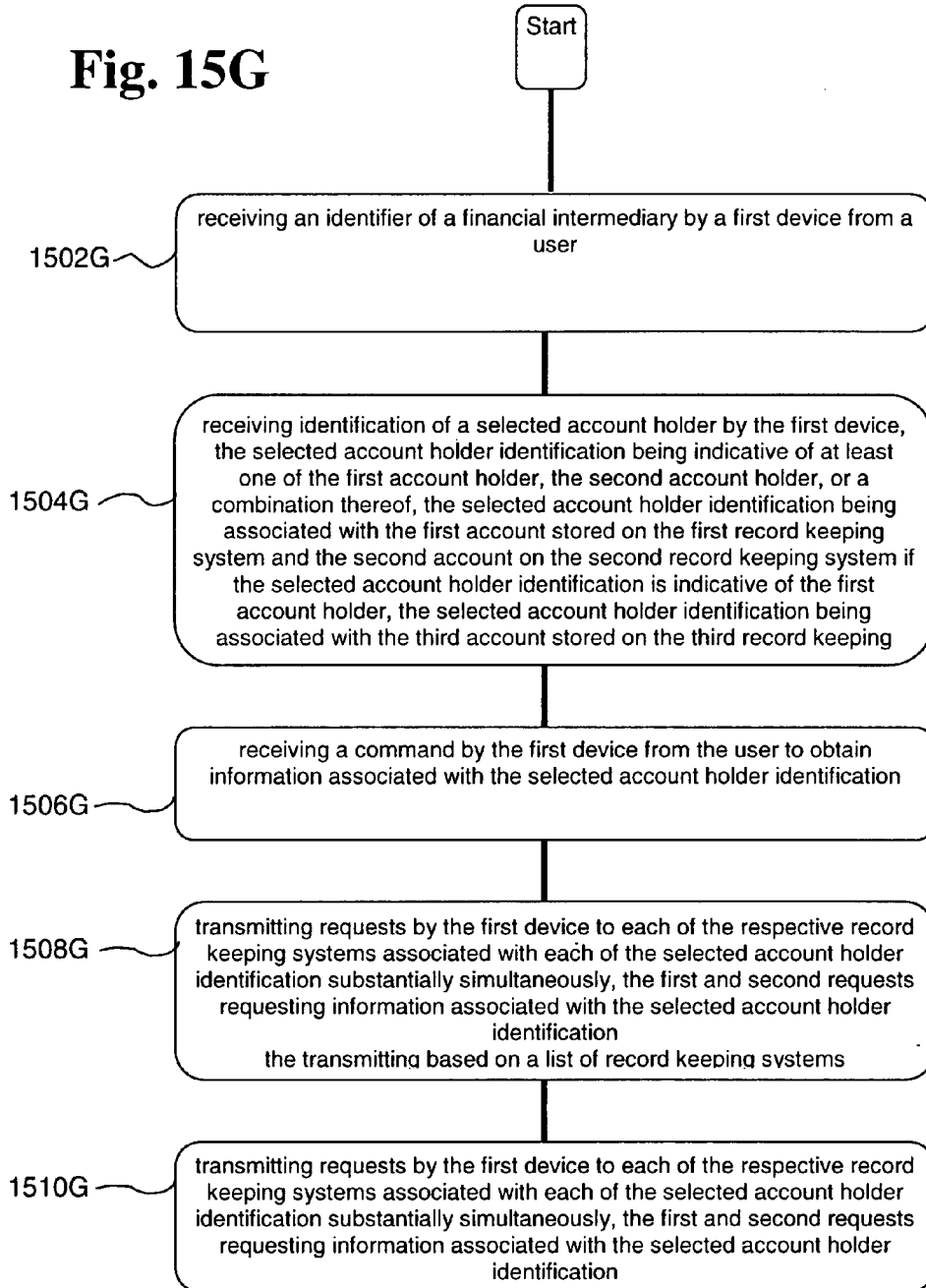


Fig. 15H

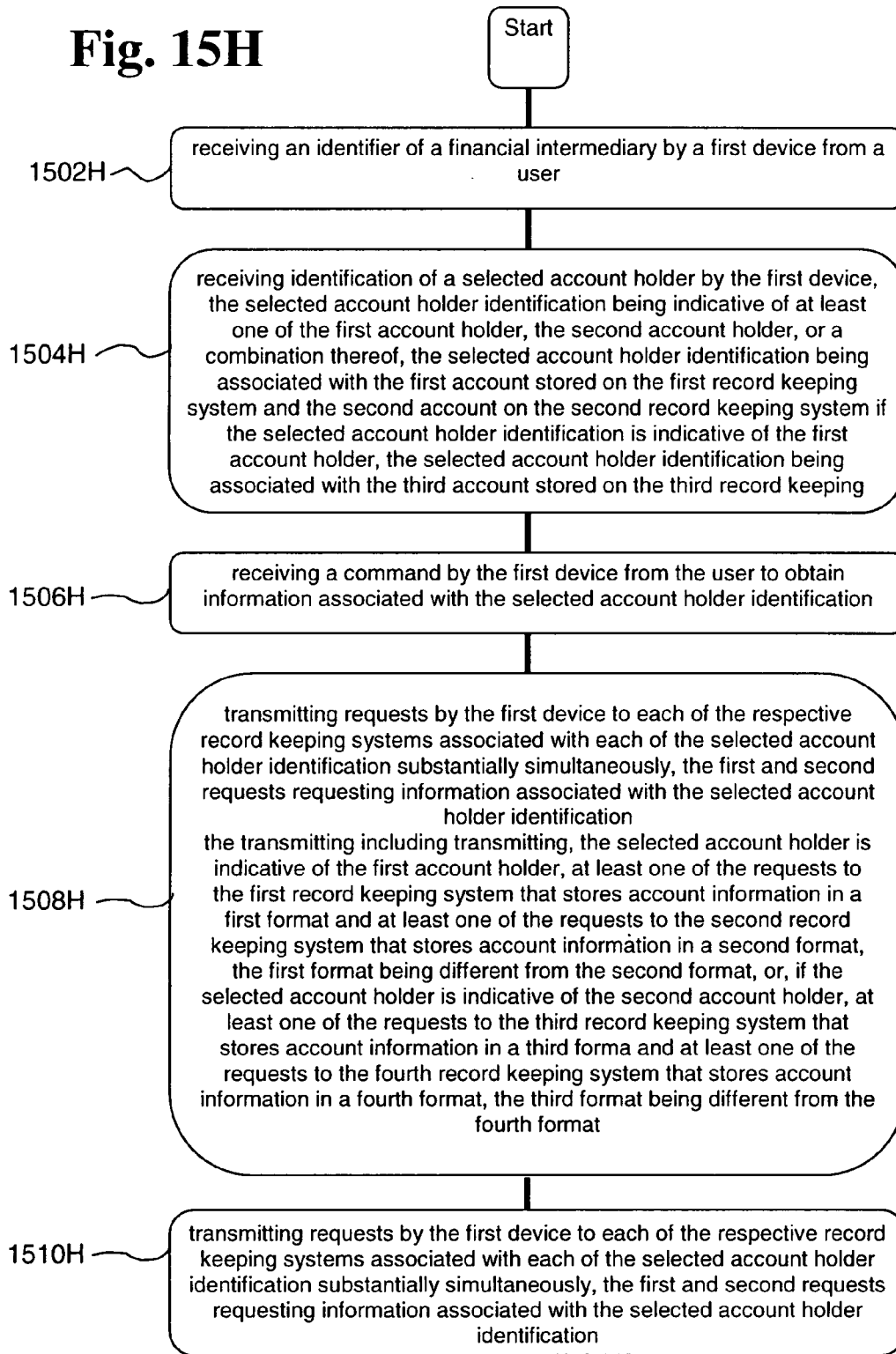


Fig. 15I

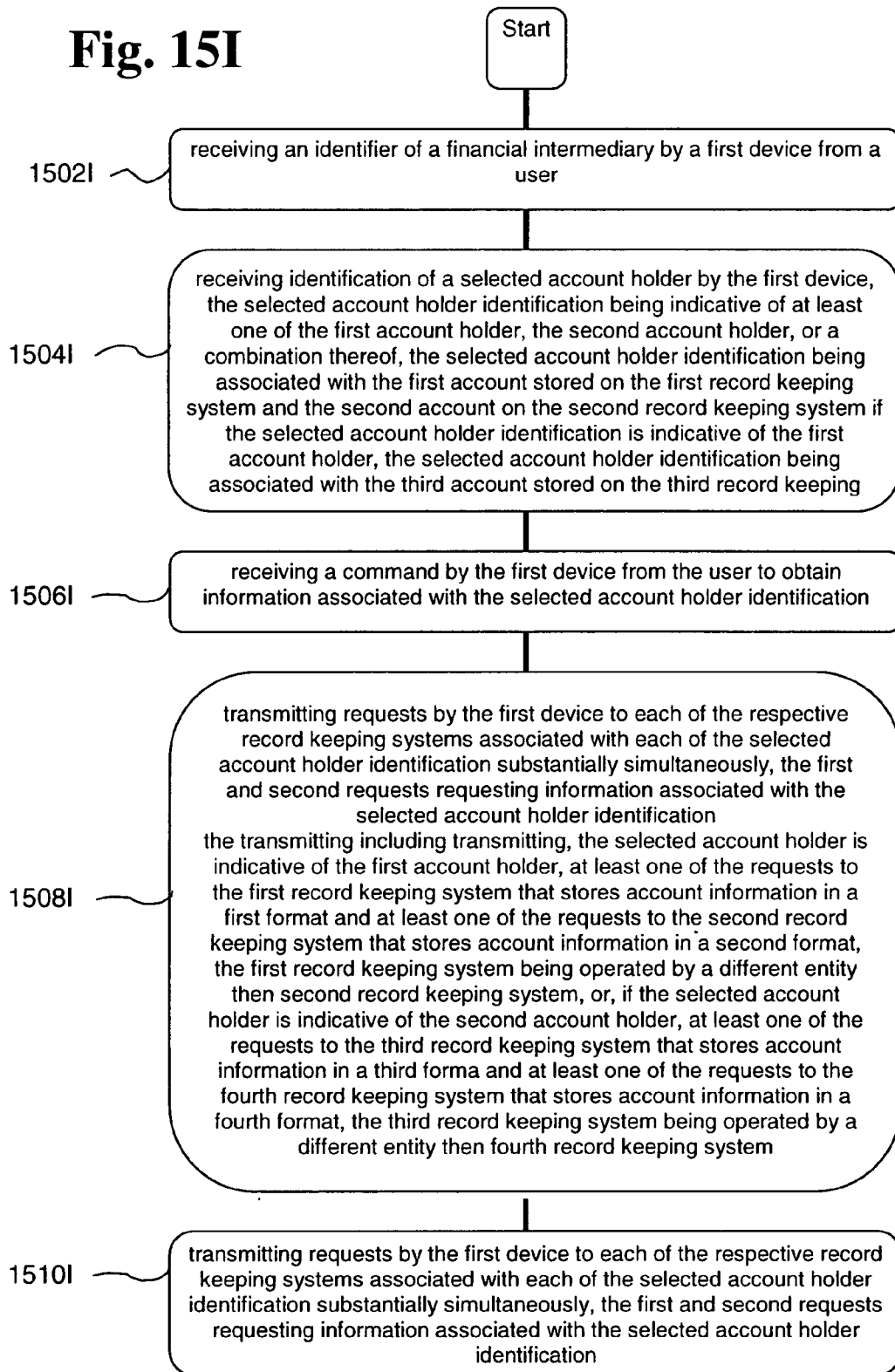


Fig. 15J

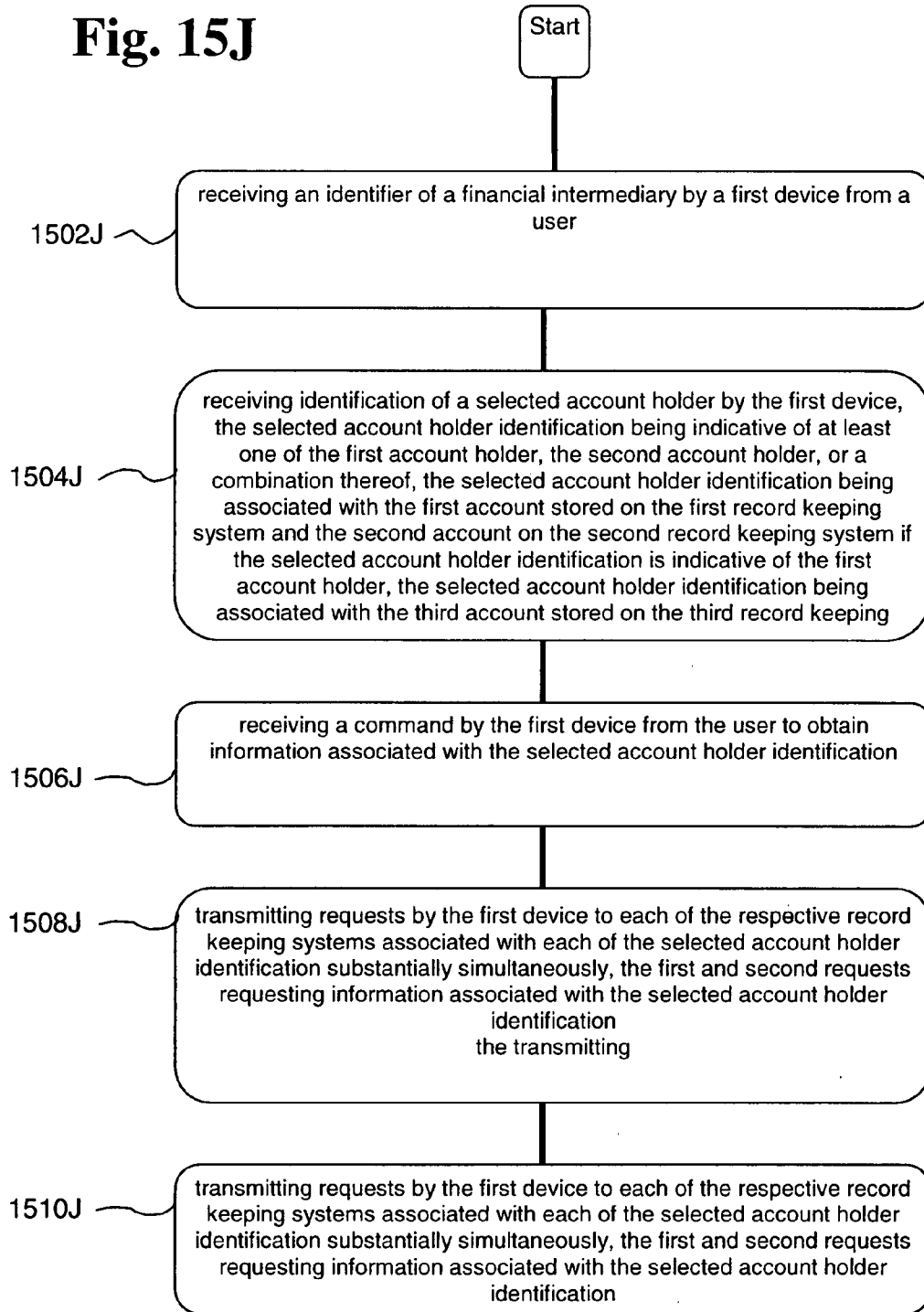


Fig. 15K

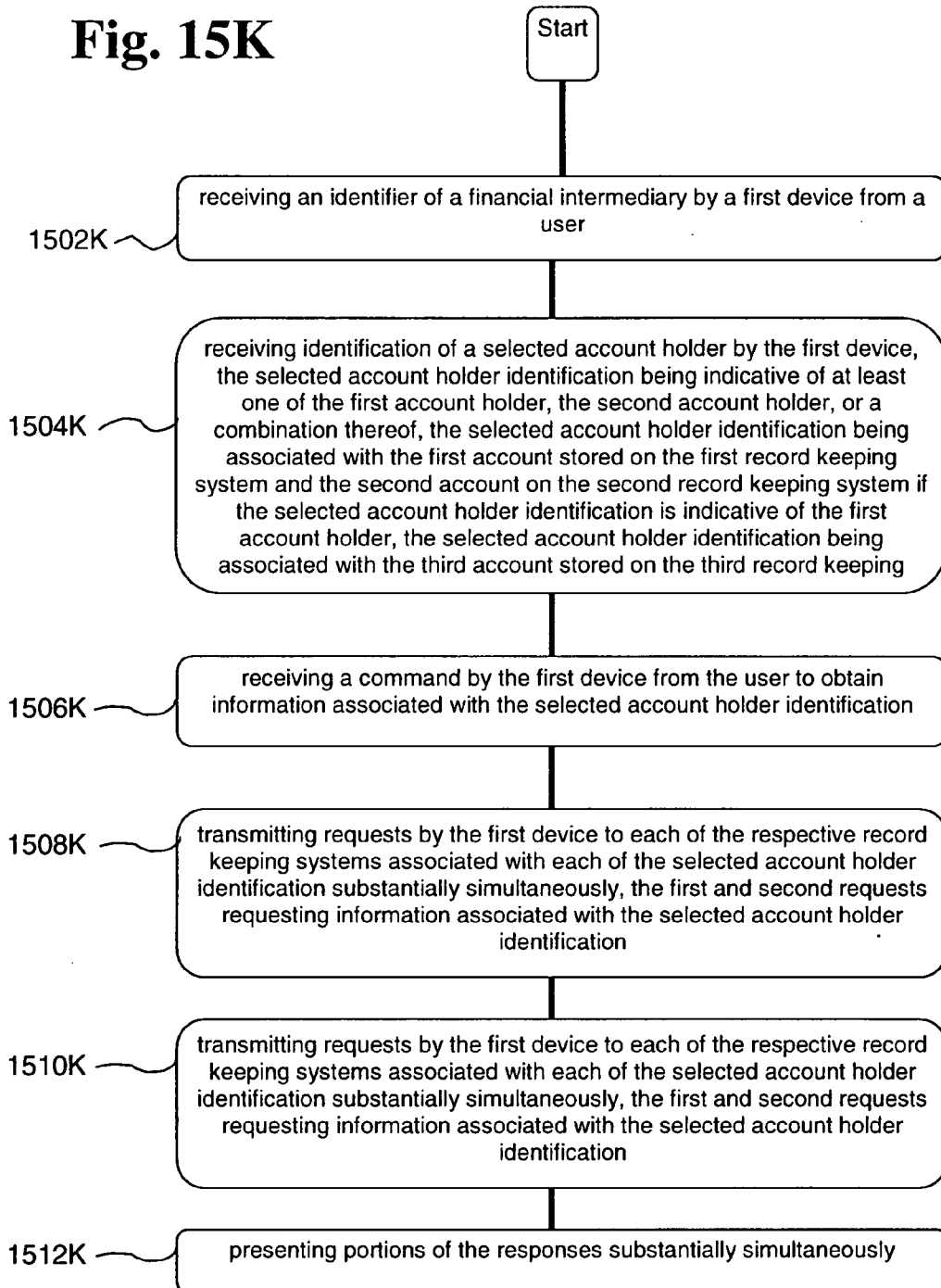
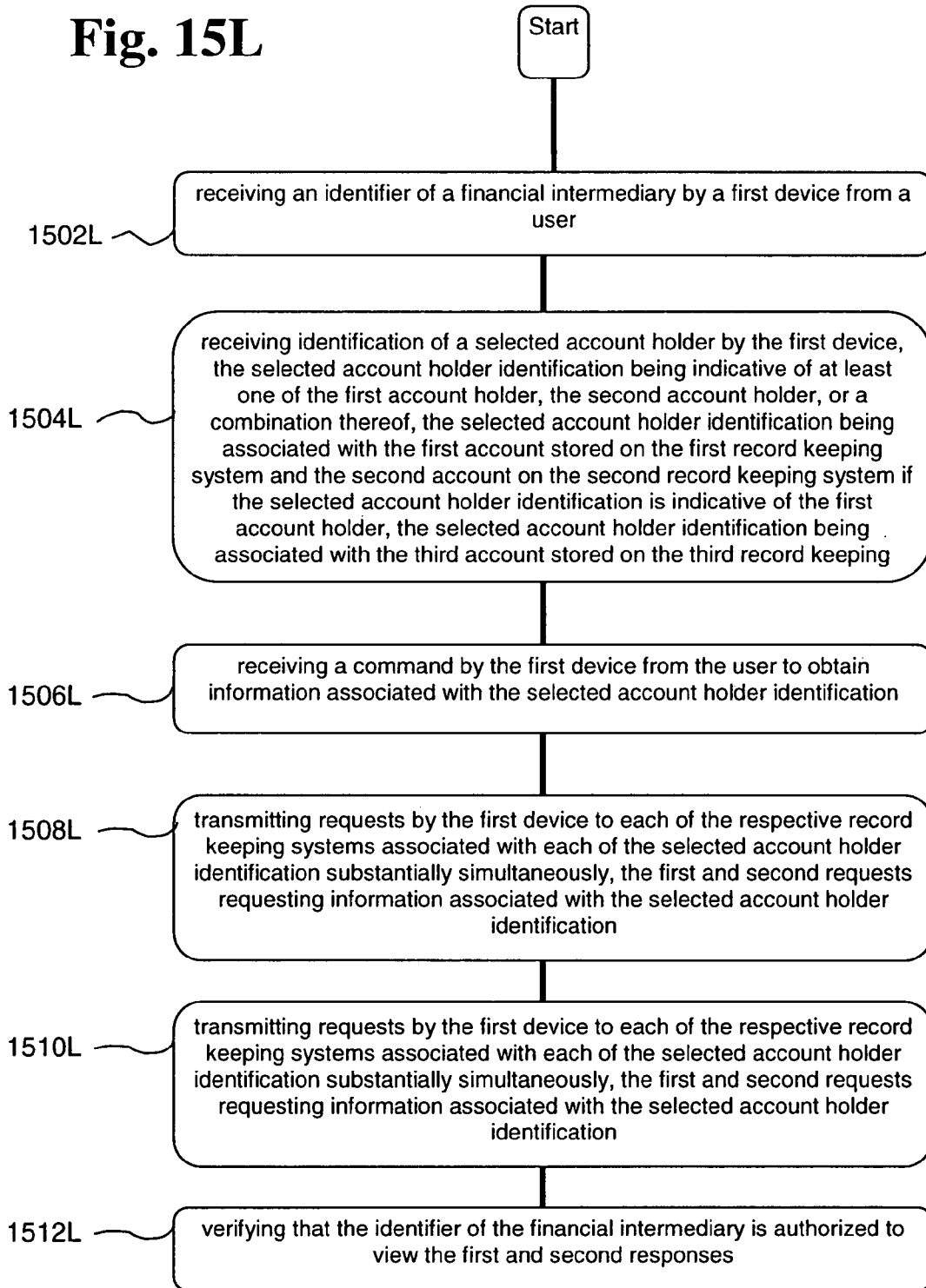


Fig. 15L



SIMULTANEOUS REAL-TIME ACCESS TO FINANCIAL INFORMATION

RELATED APPLICATIONS

The following applications are related by subject matter and are hereby incorporated by reference:

Application Ser. No. 09/475,634 entitled "Real-Time Presentation of Financial Information," currently pending.

Application Ser. No. 09/475,636 entitled "Method of Accessing Financial Information," now abandoned.

Application Ser. No. 09/476,073 entitled "Method of Account Holder Access to Financial Information," now abandoned.

Application Ser. No. 09/475,538 entitled "Method of Charging for Access to Financial Information," now abandoned.

BACKGROUND

A user of financial system must log-on to the financial system before the user performs an action such as an inquiry or a transaction. If the user wishes to access another financial system, the user must log-on to the second financial system. Each financial system usually has its own menus and presents information in its own manner. Thus, a user, who wishes to access multiple financial systems, must remember multiple log-on user IDs and passwords and learn to operate each financial system. This process is time consuming and difficult. If the user wishes to access information from multiple financial system, the user access each financial system serially, create time lags between accesses. Additionally, some financial systems charge fees based on the user's actions. If a database provider, also called a data warehouse company, maintains the database for the financial institution and provides access to the users, the database provider charges access fees. However, access and fees are limited to fees associated with accessing the databases that the database provider maintains.

BRIEF SUMMARY

The present invention is defined by the following claims, and nothing in this section should be taken as a limitation on those claims. By way of introduction, the preferred embodiments describe below include a method of simultaneously presenting user specific real-time financial information includes authenticating a user, for example by using a user-id and password. Then receiving an input from the user indicating the shareholder of interest. The user is then presented with a list of the shareholder's account information. The shareholder account information can be retrieved from several different record keeping systems. The record keeping systems can be maintained by different entities and can store the respective account information in different formats. The shareholder account information can be retrieved by broadcasting an account inquiry to the record keeping systems or by using a cross-reference table that indicates which record keeping systems the shareholder has accounts with. A combination of the broadcast and cross-reference table can be used. Once the shareholder account information is presented, the user can select an account, for example by a hyperlink tag, and receive detailed information about that account.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

The present invention is illustrated by way of example and not limitation in the accompanying figures. In the figures, like reference numbers indicate identical or functionally similar elements. Additionally, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears.

FIG. 1 is a representation of an embodiment of a system for accessing financial information;

FIG. 2 is a representation of an embodiment of databases stored in a financial record keeping system; and

FIG. 3 is a diagram of an embodiment of a screen with multiple regions displaying real-time financial information from multiple record keeping systems simultaneously;

FIGS. 4A-4P are flow charts depicting the operation of alternate embodiments of FIG. 1.

FIG. 4 is one embodiment of a screen with a portfolio view;

FIG. 5 is a representation of a bill showing the charges; FIG. 6 is a representation of an embodiment of a system for accessing financial information;

FIG. 7 is a representation of an embodiment of a method of accessing financial information;

FIG. 8(a) is a representation of an embodiment of a screen for signing-on to the system of FIG. 1;

FIG. 8(b) is a representation of an embodiment of a screen with a list of financial institutions that a user may access;

FIG. 8(c) is a representation of an embodiment of a financial institution menu window;

FIG. 8(d) is a representation of an embodiment of a shareholder account history;

FIG. 9 is a representation of an embodiment of a header portion of a message;

FIG. 10 is a representation of an embodiment of error codes for FIG. 4;

FIG. 11 is a representation of an embodiment of a request message;

FIG. 12 is a representation of an embodiment of a response message;

FIG. 13 is a representation of an embodiment of a method of enrolling a user for accessing a financial institution;

FIG. 14(a)-14(f) are representations of windows for enrolling a new user or adding access to additional financial institutions.

FIGS. 15A-15L are flow charts depicting the operation of alternate embodiments of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A financial intermediary, such as a stockbroker, needs to access his clients' financial information. The clients' financial information often includes information about accounts at different mutual fund companies and that information is often maintained on different record keeping systems. The present invention allows the financial intermediary to view substantially simultaneously the clients' financial information from multiple record keeping systems with one user ID and password. This significantly simplifies the process of accessing the clients' financial information.

DST Systems' Vision Mutual Fund Gateway (Vision) incorporates some, but not all, of the features describe below. Vision includes an interactive internet site, www.dstvision.com, that allows financial intermediaries to access financial information in a real-time environment. Financial

intermediaries include broker/dealers, financial advisors, financial representatives, and other. The financial information accessible through vision includes fund, shareowner account, and dealer information. Specifically, the financial information includes real-time information such as shareholder positions, account options, transaction histories, fund pricing and yields. Further, the financial information includes fund information, net asset value summaries, distribution information, order information, dealer information, branch information, representative information, and account summaries by representatives or advisor number. Vision also supports information inquiry that include inquiries to account information by dealer account number, fund account number, shareholder name, tax identification number or social security number, and representative or advisor number.

Vision provides access to all authorized fund groups via a single log-on, real-time fund and shareholder account information, transaction processing, and new account creation. Vision is accessible via an intranet or other networks, such as the Internet.

FIG. 1 is a representation of an embodiment of a system 100 for accessing and presenting financial information. The system 100 includes a computer 104, a server 106, and first and second record keeping systems 108, 110. The computer 104 includes a personal computer, terminal, laptop, palmtop, mainframe, or other device capable of communicating with the server 106. In an embodiment, the computer 104 includes an output device such as a monitor, a diskette drive, or a printer. The computer 104 includes an user interface for receiving inputs from the user and providing outputs to the user.

The server 106 communicates with the computer 104 and a plurality of record keeping systems, for example the first record keeping system 108 and the second record keeping system 110. In an embodiment, the server 106 includes an access module and an user interface module. The access module is capable of accessing a plurality of independent substantially real-time financial record keeping databases. The user interface module is capable of receiving inputs from a user and presenting results to a user. In an other embodiment, the server 106 includes a user interface, record keeping system interface, and a router. The user interface communicates with an authorized user and receives user requests from the user and transmits user responses to the user. The record keeping system interface accesses information on first and second record keeping systems that maintain respective first and second account information in different formats. The router routes user requests to the first or second record keeping system as appropriate.

In a preferred embodiment, the first and second record keeping systems 108, 110 are owned by different entities, such as mutual fund companies. The server 106 may be owned by the same entity that owns one of the first and second record keeping systems 108, 110 or other entity. An example of a record keeping is DST Systems' TA2000®.

In an embodiment, the records stored in the first and second record keeping systems 108, 110 are stored in different formats. In another embodiment, the record keeping systems 108, 110 have different data structures or different operating systems. The record keeping systems 108, 110 are controlled by a.) a data warehouse company that maintains the data for a financial institution, b.) the financial institution maintains their own data warehouse, or c.) another entity.

The records stored in the first and second record keeping systems 108, 110 include account information, such as

mutual fund accounts, annuities, and other financial information, and fund information, such as yield to date, and net asset value. The records may include other account and/or fund information.

A user at the computer 104 accesses the information stored on the first and second record keeping systems 108, 110 through the server 106. Preferably the users are financial intermediaries. The computer 104 accesses the server 106 via the Internet, a direct connect, an intranet, or other mechanism. Preferably, the computer 104 accesses the server 106 via the Internet using the secure socket layer protocol (SSL). Preferably, the first and second record keeping systems 108, 110 maintain real-time financial information on accounts and funds.

The server 106 maintains several databases that track relationships. The relationships are stored in tables, database, flat files, or with other mechanisms. These databases include authentication information, such as the operator ID and password that are used during user log-on. The databases include the relationship between the operator ID and remote systems operator IDs.

For example, a user signs onto the system 100 using an operator ID and password. When that user accesses a record keeping system, the server 106 determines an second ID for the record keeping system associated with the operator ID and password. The server 106 sends a request for information to the record keeping system with the second ID, that is the operator ID or remote system operator ID. Thus, a user need only remember the operator ID and password for the server 106, and need not know the IDs for the record keeping systems. Each record keeping system uses its own ID or the server operator ID.

The server 106 also maintains information representing the relationships between operator ID and the user's financial companies. For example, after a user logs-on to the server 106 with an operator ID and password, a list of fund families is presented. The list includes the funds that the user is allowed to access. Fund families are also called fund companies, mutual fund companies, and management companies.

The server 106 also maintains a routing table that represents the relationship between the fund companies and the record keeping system where their financial data is stored. This table is used to route request to record keeping systems. Financial data includes account data and fund data.

For example, when the server 106 receives an inquiry for fund information, the server 106 determines which record keeping entity has the data for that fund. A request for an action is then transmitted to that record keeping entity. Preferably, the request includes an action code or action indicator that indicates an action to be taken. Likewise, the response includes a response code or response indicator that indicates the status of the action. In one embodiment, the record keeping systems are directly connected with the server 106, and the routing includes port identifications, where each record keeping system is associated with a port. Preferably, the server 106 communicates with the first and second record keeping systems via a secure access, such as a direct connection. In this example, the server 106 is a trusted system and the first and second record keeping systems do not require the server 106 to be authenticated. The action can include an inquiry, a transaction, or other activity related to an account or fund. In a preferred embodiment, the record keeping systems are directly connected with the server 106, and the routing includes port identifications, where each record keeping system is associated with a port. Preferably, the server 106 communicates with the first

5

and second record keeping systems via a secure access, such as a direct connection. In this example, the server **106** is a trusted system and the first and second record keeping systems do not require the server **106** to be authenticated.

Financial intermediaries are often associated with dealer, branch, and representative identifiers. In a preferred embodiment, the record keeping system may maintain the relationships between each operator ID and the operator's dealer, broker, and representative. The dealer, broker, representative information is used to control access to account and fund information on the record keeping system. For example, a representative has access to his clients' account information. A branch manager has access the account information of the representatives in that branch. A dealer has access to the account information of the representatives at each branch.

Alternatively, the server **106** maintains the relationships between a user's operator ID and the dealer, branch, and representative associated with the operator ID. The dealer, branch, and representative is provided to the record keeping system in a request for information or a request for a transaction.

In a preferred embodiment, the first record keeping system **108** is a TA2000® system and the server **106** is a FAN® switch and a Stratus® server.

Optionally, a user at the computer **104** also accesses a record keeping system independently of the server **106**. For example, direct connection is offered by some record keeping systems.

After the server **106** transmits a request for information to a record keeping system, the server **106** receives a response from the record keeping system. The server **106** evaluates the response and selectively presents a portion of the response to the user. The response includes the requested information or an error message. Portion of multiple responses can be presented to the user serially or substantially simultaneously.

In an embodiment, the server **106** executes a computer program(s) embodied on a computer-readable medium capable of presenting real-time financial account information to authenticated users. The computer program(s) includes a security module, a communication module, and a presentation module. The security module authenticates users for example with a user ID and password. The communication module communicates with at least first and second record keeping systems. The first and second record keeping system storing at least first and second real-time financial accounts in respective first and second storage formats. The first storage format being different from the second storage format. The communication module sending first and second requests for real-time financial account information to the respective first and second record keeping systems and receiving first and second responses from the respective first and second record keeping systems. The presentation module presents a portion of the first and second responses serially or substantially simultaneously.

In another embodiment, the server **106** includes an access module and a user interface module. The access module accesses a plurality of independent substantially real-time financial record keeping databases. The user interface module receives requests and presenting results relating to the plurality of independent substantially real-time financial record keeping databases. The user interface module presents a uniform set of user displays for accessing the independent substantially real-time financial record keeping databases. Some of the modules described above may be implemented separate from the server **106**, such as on the computer **104**.

6

The user provides authentication information, such as a user identification and password. Preferably, the user establishes an account by accessing an Internet based site and entering a user ID and password. Then the user enters contact and verification information that includes user's name, address, social security number, phone number, e-mail address, and other information. During subsequent accesses, the user enters the user ID and password. When a user has forgotten a user ID or password, a message containing the forgotten information can be sent to a secure e-mail system, such as DST Systems' ePriority system. Alternatively, a user enters information such as social security number, and/or date of birth to verify their identity, and the forgotten information is presented to the user. Once authenticated, the user enters an identification or identifications of the account holder(s) that the user wishes to get information about. A request for account information associated with the account holder identification(s) is sent to various record keeping systems. A response is received from those record keeping systems.

The request for account information is sent to the record keeping systems known to have information associated with the account holder identification. This can be determined by using a cross-reference table that indicates which record keeping systems have information associated with a given account holder's identification. This cross-reference table is created after the user enrolls with the server **106**. Preferably, the record keeping systems or the financial institutions provide the cross-reference information to server **106**. Some record keeping systems or the financial institutions may choose not provide the cross-reference information. In this case, they receive a broadcast request for information every time a request for information is sent.

Alternatively, this cross-reference between account holder's identification and accounts is created during the enrollment process where each fund company is identified by the user. A cross-reference between fund company and record keeping system is used to create the cross-reference table between account holder identification and record keeping system.

Alternatively, the cross-reference table is created in whole or in part based on previous responses to broadcast requests for information. That is, a request for account information associated with an account holder identification is sent to some or all of the known record keeping systems. The broadcast is performed periodically or on an ad hoc basis. The responses indicate which record keeping systems have account information associated with them. This information is used to update the cross-reference table. This is an example of a dynamic cross-reference table.

The requests for account information are transmitted based on a cross-reference table and/or based on a list of record keeping systems or financial institutions that are known not to be included in cross-reference table. Some entities maintaining record keeping systems or financial institutions may prefer to receive a request every time a request is made and then determine if the requested account information is available instead of maintaining cross-reference tables.

While financial intermediaries accessing mutual fund accounts have been used as an example, the present invention as defined by the claims can be applied to other financial accounts such as annuities, credit accounts, bank accounts, and other financial accounts.

Optionally, the system **100** allows the user to maintain multiple portfolios having different accounts within each portfolio. For example, a user has a first portfolio with

accounts that are part of a 401K plan, a second portfolio with accounts that are not part of a 401K plan, and a third portfolio with the accounts in the first and second portfolios. Each portfolio includes accounts from one or more different financial institutions, and the account data is maintained by the same or different record keeping companies. The user edits, deletes, and creates new portfolios as desired.

In one embodiment, the system **100** accesses no-load mutual fund data from a plurality of financial institutions maintained on a plurality of record keeping systems. The user accesses the account information by navigating a set of screens. A single user ID and password gives the user access to the plurality of accounts. The user performs inquiries, transactions, and account servicing for each of the accounts. Optionally, a consolidated view of the user's accounts is presented.

Optionally, the provider of the services described above charges fees for accessing the account information. It is preferred that the fees be charged to the financial institutions. Alternatively, the account holder, a third party, or a combination thereof is also charged. Possible fees include: setup fees, monthly operator ID fees, per view fees, per transaction fees, registration fees (also called new account fees), monthly minimum fees, and other fees. Optionally, advertising fees are charged for advertisements that appear on a screen.

For example, the fee are as follows: inquiry view fee \$0.05, user ID fee \$5 per month per financial institution, purchase fee \$0.50, redemption fee \$0.50, exchange fee \$0.50, new account fee \$3, account position inquiry \$0.05, account history inquiry \$0.05, portfolio position inquiry \$0.05, transactions \$0.50. Alternatively, the fees are inquiry views \$0.05 and transactions \$0.50. Different fees, combinations of fees and/or fee amounts may be used.

The user performs actions including inquiry, transactions, and account maintenance. The inquiry actions include portfolio positions (shares price, market value, etc.), portfolio history (transactions across accounts, etc.), account details (registration, dividend options, account options, etc.), and account history (transactions within an account). The transaction actions include purchases by an automated clearing house (ACH) to new or existing accounts, redemption by ACH, withdraws by check, withdraws by wire, exchanges to new or existing accounts within the same fund family, and exchanges to new or existing accounts across fund families. Account maintenance actions include ordering duplicate statements, viewing statements on-line, ordering duplicate tax forms, viewing tax forms on-line, viewing year-end information, ordering checkbooks, changing address, updating distribution options, adding/Updating systematic agreement files, updating bank information, establishing new accounts, and averaging costs. Other inquiries, transactions and/or account maintenance actions may be provided.

In a preferred embodiment, the system provides financial planning capabilities including asset allocation graphs by investment and Morningstar data or other value service data.

Optionally, the server **106** charges for access to real-time financial information stored on independent systems and includes an access module and a fee module. The access module provides user access to a first real-time financial account on a first system and a second real-time financial account on a second record keeping system. The first account being associated with a different financial institution than the second account. The fee module calculates at least first and second fees based on accesses to the respective first and second financial institutions. The fees are a function of

user initiated activities. Optionally, the fee module includes a billing module that transmits a bill electronically.

FIG. 2 is a representation of an embodiment of databases stored in a financial record keeping system. The record keeping system format **200** includes information on fund families, **202**, **204**. The first fund family **202** includes information related to a plurality of accounts in the accounts data **206** and information related to a plurality of funds in the funds data **208**. The second fund family **204** includes information related to a plurality of accounts in the accounts data **210** and information on a plurality of funds in the funds data **212**. Preferably, the funds include mutual funds and annuities, however, the invention also includes stocks, bank accounts, or other financial accounts. The funds data **208**, **212** includes such information as daily yields, year to date performance, total value, and other information.

In one example, the record keeping systems **200** is the first record keeping system **108** (FIG. 1) and is maintained and controlled by DST Systems, the first and second fund families **202**, **204** are respectively the First Fund Company and the Second Fund Company. The First Fund Company has a thousand accounts each owned by one or more account holders. The First Fund Company has twenty funds, such as a domestic growth fund, an international growth fund, a money market fund, and a balanced fund. The second record keeping system **110** (FIG. 1) is maintained by a mutual fund company and includes information on only the mutual fund company's mutual funds and accounts.

The fund families are mutual fund families, or other grouping of accounts usually at the same financial institution. The accounts represent annuities, money markets, margin accounts, bank accounts, credit accounts, and/or other accounts.

FIG. 3 is a diagram of an embodiment of a screen **300** includes a balance area **302**, a first account area **304**, and a second account area **306**. Additional account areas will be included if more accounts are retrieved. The screen **300** may be presented to a user on the computer **104** (FIG. 1) on a monitor. The balance area **302** that includes information, such as, a summary of information in the first and second account areas **304**, **306**. Optionally, the balance areas **302** also includes information relating to the account holder such as the account holder's name, address, phone number, and other information. The first and second account areas **304**, **306** each include information from different record keeping systems and/or account information. In the embodiment shown in FIG. 3, the first account area **304** shows information relating to the "First Fund Company". The account holder, "John Smith", has two accounts with First Fund Company. These accounts have the same account number "000111" and different fund names "Growth" and "Tech Fund." Account information about John Smith's accounts include his tax ID, for example his social security number, the number of shares, and the balance. Other account information can also be included.

Once screen **300** is presented to the user, the user receives further details of any account by selecting the desired account. The desired fund is selected by activating a hyper link on the display, by entering the account information, or by any other means.

Preferably, the account information shown in FIG. 3 is substantially real-time financial information.

While FIG. 3 shows a first record keeping system with a first and second fund family having account data and fund data, other embodiments may have similar or different structure and include similar or different information. For example, the fund families are replaced with annuity family,

or accounts at a particular financial institution that may include some mutual funds, some annuity funds, some brokerage accounts, and/or other accounts. In these cases, the account data contains information about the accounts. However, the type of information may vary based on the type of account.

The second account area **306** shows information for John Smith at the Second Fund Company.

For example, the screen **300** having substantially real-time financial information that is stored on a first record keeping system and a second record keeping system, the first record keeping system being different from the second record keeping system is accessed by the following method.

The server **106** (FIG. **1**) receives an account holder identification from a user. The account holder identification is associated with a first account information stored on the first record keeping system and a second account information on the second record keeping system. The server **106** transmits first and second requests to the respective first and second record keeping systems. The first and second requests request information associated with the account holder identification. The server **106** receives first and second responses from the respective first and second record keeping systems. The first and second responses include substantially real-time financial information associated with the account holder identification. Optionally, the server **106** presents a portion of the responses to the user.

Optionally, the first request is transmitted based on a cross-reference of account holder identification to record keeping systems and the second request is transmitted based on a list of record keeping systems known to be absent from the cross-reference. For example, the first request is transmitted based on Table 1 and Table 2 and the second request is transmitted based on Table 3.

Table 1 is an embodiment of a cross-reference table showing relationships between account holder, tax ID, first and second account holder id, and record keeping system. Table 1 shows an account holder that has different account holder identifications for each record keeping system.

TABLE 1

Account Holder	Tax ID	First Account Holder ID	Second Account Holder ID	Record Keeping System
John Smith	123-45-6789	JS0000123	JS0000123	First RKS
John Smith	123-45-6789	JS0000123	JS0000123	First RKS
John Smith	123-45-6789	JS0000123	XYZ00999	Second RKS
Mary Jones	111-22-3333	MJ101010	MJ101010	First RKS
Mary Jones	111-22-3333	MJ101010	444555666	Second RKS
Mary Jones	111-22-3333	MJ101010	444555666	Third RKS
Mary Jones	111-22-3333	MJ101010	87654321	Fourth RKS

Table 2 is an embodiment of a cross-reference table showing relationships between account holder, tax ID, second account holder ID, financial institutions, and account identifier. Table 2 shows that an account holder may have several accounts at one or more financial institutions and the account information is stored on different record keeping systems as indicated in Table 1.

TABLE 2

Account Holder	Tax ID	Second Account Holder ID	Financial Institution	Account Identifier
John Smith	123-45-6789	JS0000123	ABC Funds	1000333
John Smith	123-45-6789	JS0000123	CDF Funds	2200333

TABLE 2-continued

Account Holder	Tax ID	Second Account Holder ID	Financial Institution	Account Identifier
John Smith	123-45-6789	XYZ00999	XYZ Funds	990099
Mary Jones	111-22-3333	MJ101010	ABC Funds	1000111
Mary Jones	111-22-3333	444555666	PDQ Funds	2234343
Mary Jones	111-22-3333	444555666	DEF Funds	333444
Mary Jones	111-22-3333	87654321	HIJ Funds	44440001

Table 3 is an embodiment of a table showing relationships between record keeping systems and financial institutions. Table 3 shows the record keeping systems and financial institutions that are accessible to the server **106** (FIG. **1**) but are do not maintain their accounts in the cross-reference tables Table 1 and Table 2. The record keeping systems and financial institutions in Table 3 receive a broadcasted request every time the server request account information.

It is preferred that all financial institutions whose account information is maintained on a given record keeping system maintain the cross-reference tables Table 1 and Table 2. In an alternative embodiment, only some financial institutions on a given record keeping system choose to not maintain the cross-reference between account holder and financial institutions and associated record keeping systems. While the record keeping systems or the financial institutions maintain the cross-reference between account holder and financial institutions and record keeping systems, the server **106** (FIG. **1**) would have a copy of the cross-reference table for routing requests. While maintenance of the cross-reference is performed by the record keeping system or the financial institution, however, the server **106** may also maintain the cross-reference table. For example, in an embodiment with a dynamic cross-reference table, the server **106** is constantly or periodically updates the cross-reference table.

TABLE 3

Record Keeping System (Broadcast)	Financial Institutions
Fifth RKS	All Financial Institutions
Sixth RKS	All Financial Institutions
Seventh RKS	All Financial Institutions
Second RKS	TUV Fund Company, LMN Fund Company, and AAA Annuity Company

FIG. **4** shows a screen **400** with a portfolio view. The screen **400** includes a title area **402**, a portfolio selection area **404**, a portfolio data area **406**, a portfolio option area **408**, and a message area **410**.

The title area **402** includes an application title, for example "Vision Direct" and a window title, for example "Portfolio View." The portfolio selection area **404** allows the user to select a portfolio.

The portfolio data area **406** includes various information relating to the user's accounts. In one embodiment, the portfolio data area **406** includes the fund name, account number, current price, daily change in dollars per share, daily percentage change, number of shares, and current market value. The portfolio data area **406** may include other information about the accounts in the portfolio. The portfolio data area **406** also includes a portfolio total that represents the total value of the accounts displayed. Additionally, totals for the accounts in each financial institution may be included. In one embodiment, the portfolio data area **306**

includes a date field that allows the user to access the information as of a specified date.

In one embodiment, the portfolio option area **408** includes options to view a portfolio history, setup a new portfolio, and change a portfolio.

The message area **410** includes instructions or messages for the user. For example, the instructions include instructions on how to view account details, how to view fund information, and how to visit a fund family's web site.

Optionally, other screens display various types of account and fund information.

FIG. **5** is a representation of a bill **500** that includes a header area **502**, an identifier area **504**, and a charges area **506**. The header area **502** indicates the source of the bill, "Vision Mutual Fund Gateway" and the type of bill, "Monthly Billing Summary Report." The identifier area **504** includes such information as the report number, source program, job, system, corporate billing ID, management company code, and billing period. The charges area **506** includes summary data on the charges for the period identified in the identifier area **504**. The charges area **506** includes the number of action and the charges for those actions. The actions include views, vision IDs, purchases, redemptions, exchanges, and new accounts. The calculation of the charges associate with the actions are described below.

Revenue is generated for the entity providing access to financial information. For example, the entity is an entity operating the server **106** (FIG. **1**), provides access to the user via the Internet, and providing access to various record keeping systems. Some of the record keeping systems may be provided by the same entity as the server **106** while other record keeping systems are provided by other entities. Each record keeping system maintains data on one or more financial accounts, such as mutual fund account in one or more financial institutions. Optionally, the mutual fund company maintains the record keeping.

The service provider, usually the company maintaining the server **106** (FIG. **1**), generates revenue by charging one or more of the following fees: a setup fee, a monthly operator ID fee, a per view fee, a per transaction fee, a registration fee (also called a new account fee), a monthly minimum fee, and other fees.

The setup fee is charged for establishing access to a new financial institution through the server **106** (FIG. **1**). For example, if a mutual fund company wishes to provide access to accounts through the server **106**, the service provider charges a setup fee. The setup fee may be any amount, such as \$1,000, \$5,000, \$1,000,000, or another amount. The setup fee may be varied based on whether the financial institution is maintaining data on a record keeping system maintained by another entity or is maintaining its own data. For example, the setup fee for a financial institution maintaining its own data is half of the regular setup fee. In a preferred embodiment, the setup fee is \$5,000 for new customers and \$2,500 for existing customers. Preferably, the setup fee is charged to the financial institution.

The operator ID fee, also called user ID fee and user identification fee, is charged periodically, for example monthly, for each operator that has access to each account. If an operator has access to more than one account (or fund), then that operator ID fee charged for each account.

The operator ID fee is any amount, including \$0.05, \$0.50, \$1, \$2, \$3, \$4, \$5, \$100, or more. Discounts can be provided for higher volume financial institutions. The discounts are based on a graduated fee basis in one embodiment. For example, the first 500 operator IDs are \$5/ea. per

month, the next 500 operator IDs \$4/ea. per month, the next 1000 operator IDs are \$3/ea. per month, the next 1000 operator IDs are \$2/ea. per month, and each operator ID beyond 3000 is free. In this example, the maximum fee would be \$9,500/mo.

The view fee is charged for viewing the result of an inquiry. The inquiry may include information from several accounts and only one view fee is charged. Alternatively, the view fee is based on the number of accounts accessed. For example, the view fee is \$0.01, \$0.05, \$0.10, or an other amount per view. Preferably, the view fee is charged to the financial institution.

The transaction fee is charged for each transaction performed. Transactions include purchases, redemptions, exchanges, and/or other transactions. The transaction fee is \$0.01, \$0.5, \$0.50, or another amount per transaction. Preferably, the transaction fee is charged to the financial institution.

The new account fee, also called a registration fee, is charged for each new account. In a preferred embodiment, a single new account fee is charged when multiple accounts for the same shareholder or owner are established at the same time in the same mutual fund family. The new account fee is \$0.50, \$1, \$3, \$5, or an other amount. Preferably, the new account fee is charged to the financial institution.

The monthly minimum fee is charged when the total of the other monthly fees are below a desired level. For example, the monthly minimum fee is \$100, \$500, \$1,000, or an other amount. The monthly minimum is based on a per user ID basis, a per fund basis, and/or a per financial institution basis. Optionally, the monthly fee is based on the size of the financial institution, the number of accounts, and/or other factors. Optionally, the monthly minimum varies depending on whether the server **106** (FIG. **1**) provide financial transactions for the financial institution. For example, the monthly minimum fee is \$500 if the server **106** provide financial transactions and responds to inquiries and \$0 if the server just responds to inquiries.

Discounts may be provided for any type of fee or for any combination of fees. Minimum and maximum fees may be assessed for any type of fee or combination of fees. The fees for any type of fee may be graduated. The graduated fees can increase or decrease as the use of the server increases. Preferably, the fees are charged to the financial institution being accessed. However, in the alternative, the user or a third party is charged.

FIG. **6** is another representation of an embodiment of a system **600** for accessing and presenting financial information. The system **600** includes a plurality of computers **601**, **602**, **603**, each running a standard WEB browser or other communication program for accessing the server **605**. Each computer **601**, **602**, or **603** comprises a personal computer, terminal, laptop, palmtop, mainframe, or other device capable of communicating with the server **605**. The computers **601**, **602**, **603** access the server **605** via an intranet or other network, such as the Internet, or via a direct communication line. The server **605** communicates with the computers **601-603** and a plurality of record-keeping systems, for example, the first record-keeping system **608** and the second record-keeping system **610**. The computers **601-603** may execute an application for communicating with the server **605**. The server **605** may execute an application or group of applications for communicating with the computers **601-603** and the first and second record-keeping systems **608**, **610**.

According to one aspect, the first and second record-keeping systems **608**, **610** are owned by different entities,

such as fund companies. The server **605** may be owned by the same entity that owns one of the first and second record-keeping systems **608, 610**.

The records stored in the first and second record-keeping systems **608, 610** are stored in different formats, but a same format may be used. The record-keeping systems **608, 610** have different or the same data structures, and/or operating systems. The record-keeping systems **608, 610** are controlled by a data warehouse company that maintains the data for a financial institution, or the financial institutions.

The records stored in the first and second record-keeping systems **608, 610** include account information, such as mutual fund accounts, annuities, and other financial information, and fund information, such as yield to date, net asset value.

A user at a computer **601, 602, 603** accesses the information stored on the first and second record-keeping systems **608, 610** through the server **605**. It is preferred that the users include financial intermediaries. The server **605** maintains several databases that track relationships. The relationships are stored in tables, database, flat files, or with other mechanisms. These databases include the user ID and password used for user authentication or log-on. The databases include the relationship between the user ID and record-keeping systems user IDs. For example, a user signs-on to the system **600** using a user ID and password. When that user accesses a record-keeping system **608, 610**, the server **605** determines an internal ID for the record-keeping system **608, 610** associated with the user ID and password. In an alternative embodiment, the server **105** determines an ID and password for the record-keeping system associated with the user ID and password used to sign-on to the system **600**. The server **605** sends a request for information to the record-keeping system with the a user ID, which is the system user ID or the internal user ID. Thus, a user need only remember the user ID and password for signing-on to the server **605**, and need not know the user IDs for the record-keeping systems. Each record-keeping system may know the user by a different internal user ID or use the same user ID as the server **605**.

The server **605** also maintains the relationships between the system user ID and the financial companies that the user can access. For example, after a user logs-on to the server **605** with a user ID and password, a list of fund families is presented. The list includes the funds that user is allowed to access. In one aspect, the list includes just the funds accessible to the user. Fund families also comprise fund companies, mutual fund companies, financial institutions, and management companies. The list of authorized fund families is based on the relationships stored in the database.

The server **605** also maintains a routing table. The routing table includes the relationship between the fund companies and the record-keeping system where their financial data is stored. Financial data includes account data and fund data. For example, when the server **605** receives an inquiry for fund information, the server **605** determines which record-keeping company has the data for that fund. A request is then transmitted to that record-keeping company. In a preferred embodiment, the record-keeping systems **608, 610** are directly connected with the server **605**, and the routing includes port identifications, where each record-keeping system is associated with a port.

Financial intermediaries are often associated with dealer, branch, and representative identifiers. The record-keeping system may maintain the relationships between user ID and dealer, broker, and representative. The user ID may be the

user ID used to log-on to the server or the internal user ID assigned by a record-keeping system.

Alternatively, the server **605** maintains relationships between a user's user ID and the dealer, branch, and representative associated with the user ID. The dealer, branch, and representative are provided to the record-keeping system in a request for information or a request for a transaction.

The server **605** dynamically builds the HTML pages that are sent to the clients' browsers. The server **605** decodes a request from a client's browser into a transaction request and forwards the request to the Protocol Converter and Switch **606**. The switch **606** determines, by referring to the cross-reference database **612**, which record-keeping system has the requested data. The switch **606** translates and forwards the request into a format and protocol that the target record-keeping system supports and forwards the request to the target record-keeping system for processing. Once the record-keeping system has satisfied the request, it sends a response to the switch **606**. The switch **606** converts the response into a transaction response and sends the response to the server **605**. The server **605** decodes the transaction response and dynamically builds the HTML pages to be delivered and displayed in the client's browser. The switch **606** handles data translations, for example between ASCII and EBCDIC.

Referring now to FIG. 7, a flow diagram **700** of the method of accessing specific information associated with a financial institution is shown. When a user signs-on to the system of FIG. 1, the server **105** sends the first user ID and password for authentication in act **701**. The first user ID may be the Vision ID according to one embodiment. FIG. **8(a)** shows a sign-on window according to one embodiment. The system is secured by a user ID, which can be restricted at dealer, dealer/branch, and dealer representative access levels or by a tax ID. The type of security associated with a user ID will affect the account information displayed on computers **601, 602, and 603**. The password is encrypted and compared against the encrypted password.

After password authentication, a list of financial institutions that the user is authorized to access is presented to the user. The list of authorized financial institutions is determined by referring to a cross-reference database maintained within a data base, such as the User ID Cross-reference Database **612** (FIG. 6). FIG. **8(b)** shows an example of a list of financial institutions from which the user may access financial information. To add additional financial institutions, the user may click the "Sign up for Vision" hyperlink on FIG. **8(a)** to go to Vision enrollment WEB site.

In act **702** (FIG. 7), the user selects one of the financial institutions from the displayed list to request specific financial information. The switch **606** determines in act **703** whether the requested financial information is on the first record-keeping system. The switch **606** refers to the cross-reference database of financial institutions to the user ID maintained in the User ID Cross Reference Database **612** (FIG. 6).

If the selected fund is on the first record-keeping system **704**, the server **605** sends in act **705** a request to the first record-keeping system. This request includes a first identification code, which may be the system user ID. The server **605** then receives in act **706** a response from the first record-keeping system. The server **605** presents in act **707** the response to the user, via e-mail, fax, or postal mail.

If, however, the requested financial information is on the second record-keeping system **708**, the request for specific information received from the user is sent from the server

15

605 to the switch **606**. In act **709**, the switch **606** determines an internal identification code from the cross-reference database if one has been assigned to the user. In act **705** the switch routes the request to the second record-keeping system. The request includes the second identification code. The second identification code includes the internal identification code or the first identification code. In act **706** the server **605** then receives a response from the second record-keeping system. The server **605** presents in act **707** a portion of the response to the user.

FIG. **8(c)** shows a financial institution menu window for Global Prime Investor Funds, which the user may select from the list in FIG. **8(b)** in one embodiment. This window provides options for accessing detailed information about the Fund Company. FIG. **8(d)** shows a "Shareholder Account History" screen displaying transaction history information for an account within the funds. Vision provides real-time, up-to-date fund and shareholder account information.

Communications between the server **605** and the record-keeping systems **608**, **600** are via messages. The messages have a unique identifier name and may have a method to match responses with the corresponding requests. Each message, being a request or a response to a request, comprises a header portion and a data portion. For example, for accessing an Account History, the header and account history request data are sent to the record-keeping system associated with the financial information. In the response from the record-keeping system, the header and account history response data will be returned.

FIG. **9** shows an example of a header record **900** according to one embodiment. This header is sent with a request or response message. The header includes one or more:

- (1) length fields that indicate the length of the message (packet) and/or the length of data portion **901**;
- (2) a transaction ID **902**, for example ACCTHIST@VISION for the Account History request, that indicates a transaction to be performed;
- (3) the source of the a message **903**;
- (4) a source tag **904**, which should be returned in the response header;
- (5) the user ID **905** used to sign-on to the system or the internal user ID assigned by the second financial institution; and
- (6) error messages **906** used by the target system to indicate which error occurred.

FIG. **10** shows a list of error messages, which include error codes indicating whether:

- (1) a severe system error has occurred **1001**;
- (2) files are unavailable for read access **1002**;
- (3) the user ID is not authorized **1003**; and
- (4) the target fund or the system is unavailable to process the request **1004**.

Other fields and/or messages may be used.

The data portion of a request defines the specific information the user is desiring to access. The data portion of request messages and response messages may be fixed or variable length. An exemplary list of a DST request data portion in the Vision system is described on pages 34-133 of Appendix B.

FIG. **11** shows one embodiment of a data portion of a fixed length transaction message **600** for requesting an account history. The request data **1100** includes:

- (1) a first field **1101** for identifying the selected fund;
- (2) a second field **1102** for identifying a shareholder account; and

16

(3) a third field **1103** for indicating an index for requesting additional accounts.

Other fields and/or messages may be used.

FIG. **12** shows an example definition of a data portion of a response message **1200** sent by a record-keeping system in response to an account history request. The data portion **1200** includes various fields:

- (1) optionally, the type of transaction **1201**;
- (2) the number of shares **1202**;
- (3) the amount of the transaction **1203**, preferably in dollars;
- (4) the cumulative share balance of an account **1204**;
- (5) the date of the transaction **1205**; and
- (6) a transaction description **1206**.

Other fields and/or messages may be used.

According to another aspect of the present invention a method of enrolling a user for accessing financial information from a financial institution is presented. A user requesting access to financial information associated with a financial institution accesses an online sign-up. The sign-up procedure generates a user ID setup request e-mail that is automatically sent to the service provider. Upon receipt, the service provider forwards an authorization request to the appropriate financial institution(s) for approval. This request contains the pertinent information needed to verify the operator's request and the user ID. Other sign-up procedures may be used, such as in response to written or voice instruction.

The financial institution replies to the request. The financial institution may choose to provide its own user ID; however, if none is provided, the system user ID is used. If the financial institution chooses to provide its own user ID, this ID will be maintained on the cross-reference database **612** (FIG. **6**). Thus a user is able to sign-on to the system with one user ID and password to access many accounts.

FIG. **13** shows one embodiment of a flow diagram **1300** of the enrollment process. In act **1302** a user requests access to financial information. In act **1304**, the user is requested to provide certain information to the system **600** in FIG. **6**. The user information may be received via a standard client WEB browser running on one of the computers **601-603**, via phone, via e-mail, or via postal mail.

FIG. **14(a)** shows a screen for a new user enrollment or for adding additional funds to the list of authorized funds for an existing user, according to one embodiment. FIG. **14(b)** shows the new user window after the user has selected the icon labeled "New User Enrollment" **1401** in FIG. **14(a)**. When the user clicks on the icon "Enrollment Forms" **1402**, the enrollment form, as shown in FIG. **14(c)**, appears. This form allows the user to select one or more of the access levels **1403-1406**. The access levels include dealer level, branch level, representative level, and Tax ID level. FIGS. **14(d)-14(f)** show the windows for providing user information when the user selects the respective access levels **1403-1406**.

In act **1305** (FIG. **13**), the server **605** establishes a first user ID and password for the user based on the user information. The first user ID has a unique association with each individual financial institution or fund company that has been authorized for the user. This association allows the Fund Company's name to be listed on the main entry window or display after the user signs-on. The server **605** supplies the first user ID to the selected financial institution so that the financial institution applies the appropriate security and access control. Several different types of intermediaries use the system **600**, so the system **600** supports

different levels of account access. Preferably, accounts linked to the user are accessible with a single log-on.

In act **1306** the switch **606** translates the request into a format and protocol that the financial institution supports and forwards the translated request to the target financial institution. The financial institution processes the request and may authorize the user to access financial information, may decline access to financial information, may indicate that information supplied from the user is not correct, or may modify the user-specified access levels for accessing the target record-keeping system. The switch **606** receives the access authorization information from the financial institution in act **1308**, converts the response into a system transaction response, and sends the converted response to the server **605**. The server **605** decodes the transaction response.

In optional act **1310** the target financial institution assigns an internal user ID for the user. The server **605** cross-references the system user ID with the internally designated user ID in a database **612** (FIG. 6) in act **1312**, such that the user just needs to know the system user ID when accessing the financial information from financial institutions associated with both first and second record-keeping systems. If, however, the financial institution chose not to assign an internal user ID **1316**, the server **605** provides the system user ID to the user in act **1314**, and the system user ID is used for future access of the financial institution associated with both the first and second record-keeping systems. The user uses one user ID and password to access both financial institutions, such as accessing TA2000® and non-TA2000 financial institutions with the same user ID and password.

An example of the enrollment process discussed above for the Vision system is as follows. The DST receives a request from representative, Sarah Williams, for Vision access to the ABC financial institution, which is a non-TA2000 system. The DST sends the request to the ABC financial institution, and references Sarah's DST-assigned Vision User ID "VS00001693." The ABC financial institution chooses to assign Sarah an internal user ID "ABC0000067." DST cross-references these two IDs in the cross-reference database **612** (FIG. 6).

When Sarah Williams desires to access a specific financial information from the ABC financial institution, Sarah signs on to the Vision system **100**, through the window shown in FIG. 8(a), with the DST assigned Vision user ID "VS00001693." As mentioned above, this Vision user ID provides Sarah automatic access to the ABC (non-TA2000) financial institution, by means of the cross-reference database **612** (FIG. 6).

In another example, when the DST receives a request from Sarah for Vision access to the XYZ financial institution, which is also a non-TA2000 system, the DST sends Sarah's request to the XYZ financial institution, and references Sarah's DST-assigned Vision User ID "VS00001693." However, the XYZ financial institution chooses not to assign Sarah an internal user ID. The switch **606** (FIG. 6) uses Vision User ID "VS00001693" for accessing the XYZ financial institution. When Sarah desires to access specific financial information from the XYZ financial institution, Sarah signs-on to the Vision system **600** (FIG. 6) with the DST-assigned Vision User ID "VS00001693." As mentioned above, this Vision ID provides Sarah direct access to financial information from the XYZ (non-TA2000) financial institution.

The authorization request, which is sent to a target financial institution, includes the user ID and the user information entered by the user, through the windows shown in FIGS.

14(c)-14(f), in one embodiment, such as the user's name, address, phone number, and the user-demanded access levels.

The authorization response includes the user ID, access information, and the internal user ID. The access information may either include information confirming the access levels that the user had demanded, or information modifying the user-demanded access levels. For example, if the user had demanded a dealer number 123 and a representative number 345, the target financial institution may approve the dealer number 123, but may change the representative number to 678.

While the examples provided above have mutual fund companies as the financial institutions, the invention is applicable to other financial institutions such as those that deal with annuities, variable annuities, bank accounts, credit accounts, and bond funds.

While preferred embodiments have been shown and described, it will be understood that they are not intended to limit the disclosure, but rather it is intended to cover all modifications and alternative methods and apparatuses falling within the spirit and scope of the invention as defined in the appended claims or their equivalents.

What is claimed is:

1. A method of accessing substantially real-time financial information of account holders in a computerized system, the substantially real-time financial information describing a first account of a first account holder being stored on a first record keeping system, a second account of the first account holder being stored on a second record keeping system, a third account of a second account holder being stored on a third record keeping system, and a fourth account of the second account holder being stored on a fourth record keeping system, the first record keeping system being different from the second record keeping system and the third record keeping system being different from the fourth record keeping system, the first account holder being different from the second account holder, the method comprising:

- (a) receiving an identifier of a financial intermediary by a first device from a user;
- (b) receiving identification of a selected account holder by the first device, the selected account holder identification being indicative of at least one the first account holder, the second account holder, or a combination thereof, the selected account holder identification being associated with the first account stored on the first record keeping system and the second account on the second record keeping system if the selected account holder identification is indicative of the first account holder, the selected account holder identification being associated with the third account stored on the third record keeping system and the fourth account on the fourth record keeping system if the selected account holder identification is indicative of the second account holder;
- (c) receiving a command by the first device from the user to obtain information associated with the selected account holder identification;
- (d) transmitting requests by the first device to each of the respective record keeping systems associated with each of the selected account holder identification substantially simultaneously, the first and second requests requesting information associated with the selected account holder identification; and
- (e) receiving responses by the first device from the respective record keeping systems associated with the selected account holder identification, the responses

including substantially real-time financial information associated with the selected account holder identification.

2. The method of claim 1 wherein the first account holder is associated with a first mutual fund account stored on the first record keeping system and a second mutual fund account on the second record keeping system, and the second account holder is associated with a third mutual fund account stored on the third record keeping system and a fourth mutual fund account stored on the fourth record keeping system.

3. The method of claim 1 wherein (d) includes transmitting the requests based on a cross-reference of account holder identification to record keeping systems.

4. The method of claim 3 wherein (d) includes transmitting account holder identification to record keeping systems.

5. The method of claim 4 wherein (e) further includes updating the cross-reference of account holder identification to record keeping systems based on the responses.

6. The method of claim 1 wherein (d) includes transmitting at least one of the requests based on a cross-reference of account holder identification to record keeping systems and transmitting at least one of the requests based on a list of record keeping systems known to be absent from the cross-reference.

7. The method of claim 1 wherein (d) includes transmitting the requests based on a list of record keeping systems.

8. The method of claim 1 wherein (d) includes transmitting, if the selected account holder is indicative of the first account holder, at least one of the requests to the first record keeping system that stores account information in a first format and at least one of the requests to the second record keeping system that stores account information in a second

format, the first format being different from the second format, or, if the selected account holder is indicative of the second account holder, at least one of the requests to the third record keeping system that stores account information in a third format and at least one of the requests to the fourth record keeping system that stores account information in a fourth format, the third format being different from the fourth format.

9. The method of claim 1 wherein (d) includes transmitting, if the selected account holder is indicative of the first account holder, at least one of the requests to the first record keeping system that stores account information in a first format and at least one of the requests to the second record keeping system that stores account information in a second format, the first record keeping system being operated by a different entity than second record keeping system, or, if the selected account holder is indicative of the second account holder, at least one of the requests to the third record keeping system that stores account information in a third format and at least one of the requests to the fourth record keeping system that stores account information in a fourth format, the third record keeping system being operated by a different entity than fourth record keeping system.

10. The method of claim 1 wherein (d) includes transmitting the first action requesting a status of the first and second financial account.

11. The method of claim 1 further including (f) presenting portions of the responses substantially simultaneously.

12. The method of claim 1 further comprising verifying that the identifier of the financial intermediary is authorized to view the first and second responses.

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